





INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)

Primary Grade 4

Term 1

2021-2022

Student's Book

Introduction

تشهد وزارة التربية والتعليم والتعليم الفني مرحلة فارقة من تاريخ التعليم في مصر، فقد انطلقت إشارة البدء في التغيير الجذري لنظامنا التعليمي بدءًا من مرحلة رياض الأطفال حتى نهاية المرحلة الثانوية (التعليم 2.0). لتبدأ أول ملامح هذا التغيير من سبتمبر 2018 عبر تغيير مناهج مرحلة رياض الأطفال والصف الأول تلاها الصفين الثاني والثالث الابتدائي. وفي 2021 بدأنا في تغيير منهج الصف الرابع الابتدائي وسنستمر في التغيير تباعًا للصفوف الدراسية التالية حتى عام 2030 ، إذ نعمل على إحداث نقلة نوعية في طريقة إعداد طلاب مصر ليكونوا شبابًا ناجحين في مستقبل لا يمكننا التنبؤ بتفاصيله.

وتفخر وزارة التربية والتعليم والتعليم الفني بأن تقدم هذه السلسلة التعليمية الجديدة، فضلًا عن المواد التعليمية الرقمية التي تعكس رؤيتها عن رحلة التطوير. ولقد كان هذا العمل نتاجًا لكثير من الدراسات والمقارنات والتفكير العميق والتعاون مع الكثير من علماء التربية في كل من المؤسسات الوطنية والعالمية لكي نصوغ رؤيتنا في إطار قومي إبداعي ومواد تعليمية ورقية ورقمية فعالة.

وتتقدم وزارة التربية والتعليم والتعليم الفني بكل الشكر والتقدير لمركز تطوير المناهج والمواد التعليمية ومديرته وفريقها الرائع على وجه التحديد، كما تتقدم بالشكر لمستشاري الوزير وكذلك مديري عموم المواد الدراسية، وكذلك تخص بالشكر والعرفان مؤسسة ديسكفري التعليمية، ومؤسسة ناشيونال جيوجرافيك للتعليم، ومؤسسة نهضة مصر، ومؤسسة لونجمان مصر، ومنظمة اليونيسف، ومنظمة اليونسكو، والبنك الدولي لمساهمتهم في تطوير إطار المناهج الوطنية بمصر، وكذلك أساتذة كليات التربية المصرية لمشاركتهم الفاعلة في إعداد إطار المناهج الوطنية في مصر. وأخيرًا تتقدم الوزارة بالشكر لكل فرد في قطاعات وزارة التربية والتعليم الذين ساهموا في إثراء هذا العمل.

إن تغيير نظامنا التعليمي لم يكن ممكنًا دون الإيمان العميق لدى القيادة السياسية المصرية بضرورة التغيير، فالإصلاح الشامل للتعليم في مصر هو جزء أصيل من رؤية السيد الرئيس عبد الفتاح السيسي لإعادة بناء المواطن المصري. ولقد تم تفعيل تلك الرؤية بالتنسيق الكامل مع السادة وزراء التعليم العالي والبحث العلمي، والثقافة، والشباب والرياضة. إن نظام التعليم (2.0) هو جزء من مجهود وطني كبير ومتواصل للارتقاء بمصر إلى مصاف الدول المتقدمة لضمان مستقبل عظيم لجميع مواطنيها.

كلمة السيد وزير التربية والتعليم
والتعليم الفني

يسعدني أن أشارككم هذه اللحظة التاريخية في عمر مصرنا الحبيبة والتي تمثل استمرارًا لانطلاقة نظام التعليم المصري الجديد، والذي تم تصميمه لبناء إنسان مصري منتمٍ إلى وطنه وإلى أمته العربية وقارته الإفريقية، مبتكر، ومبدع، يفهم ويتقبل الاختلاف، ومتمكن من المعرفة والمهارات الحياتية، وقادر على التعلم مدى الحياة وقادر على المنافسة العالمية.

لقد آثرت الدولة المصرية أن تستثمر في أبنائها عن طريق بناء نظام تعليم عصري بمقاييس جودة عالمية، من أجل أن ينعم أبناؤنا وأحفادنا بمستقبل أفضل، وكي ينقلوا وطنهم "مصر" إلى مصاف الدول الكبرى في المستقبل القريب.

إن تحقيق الحلم المصري في التغيير مسئولية مشتركة بين مؤسسات الدولة أجمعها ، وأولياء الأمور والمجتمع المدني والتعليم الخاص ووسائل الإعلام في مصر. وهنا أود أن أخص بالذكر
السادة المعلمين الأجلاء الذين يمثلون القدوة والمثل العليا لأبنائنا، ويقومون بالعمل الدؤوب لإنجاح هذا المشروع القومي.

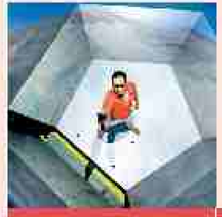
إنني أناشدكم جميعًا أن يعمل كل منا على أن يكون قدوة صالحة لأبنائنا، وأن نتعاون جميعًا لبناء إنسان مصري قادر على استعادة الأمجاد المصرية وبناء الحضارة المصرية الجديدة.

خالص تمنياتي القلبية لأبنائنا بالتوفيق، واحترامي وتقديري لمعلمي مصر الأجلاء.

الدكتور طارق جلال شوقي
وزير التربية والتعليم والتعليم الفني

Contents

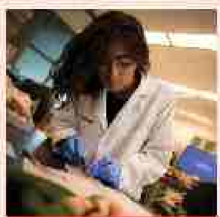
Scope and sequence



THEME I The role of ICT in our lives

Essential Question: How can we use technology effectively?

LESSON	TOPICS	SKILLS INTEGRATION		
		Life Skills	Values	Issues and challenges
LESSON 1 Explorer in Action	• How archaeologists use ICT in their jobs and daily life • Technology used to explore the earth	Learning to know: critical thinking; problem solving	Academic values: appreciation of science and scientists	Issues of globalization: technological awareness
LESSON 2 The evolution of technology	• The history of ICT • How technology is used in our daily life • Practice of typing skills	Learning to know: critical thinking; problem solving Learning to be: communication; self-management	Academic values: appreciation of science and scientists; curiosity	Issues of globalization: technological awareness
LESSON 3 Components of computer systems	• The main components of computer systems • Input, output and data • Different types of computer hardware	Learning to do: collaboration Learning to know: creativity; problem solving	Academic values: perseverance	Issues of globalization: digital citizenship
LESSON 4 Software and operating systems	• Operating systems and software • How a computer communicates	Learning to be: communication Learning to know: creativity	Work values: collaboration	Issues of globalization: technological awareness
LESSON 5 Supporting people of determination	• Assistive technology • How technology can improve the lives of people of determination	Learning to know: creativity Learning to live together: empathy; respect for diversity	Co-existence values: respect; tolerance and acceptance	Non-discrimination issues: discrimination against people with special needs
LESSON 6 Common ICT problems and solutions	• Common ICT problems • Solutions to common ICT problems	Learning to know: creativity; problem solving		Issues of globalization: technological awareness
LESSON 7 Collecting, analyzing and graphing data	• Digital tools to organize data • Collecting, analyzing and graphing data	Learning to be: communication Learning to live together: participation	Academic values: objectivity	
LESSON 8 Reporting findings	• Different ways to communicate electronically	Learning to be: communication Learning to know: creativity; critical thinking	Co-existence values: participation	Issues of globalization: entrepreneurship



THEME 2 Digital safety and security precautions

Essential Question: How can you be safe and use reliable sources when online?

LESSON	TOPICS	SKILLS INTEGRATION		
		Life Skills	Values	Issues and challenges
LESSON 1 Explorer in Action	• How scientists use ICT in their jobs and daily life • How technology can help to communicate information	**Learning to know:** critical thinking; problem solving	**Academic values:** appreciation of science and scientists	**Health and population issues:** therapeutic health
LESSON 2 Online dangers and how to be safe	• Online risks and dangers • The importance of keeping personal information private • Staying safe online	**Learning to be:** communication **Learning to know:** critical thinking	**Personal values:** independence	**Citizenship issues:** awareness of duties and rights
LESSON 3 Using ICT tools in a healthy and ethical way	• Posting online • Crediting others • Respecting the law • The positive effects of ICT tools	**Learning to live together:** respect for diversity **Learning to be:** accountability	**Co-existence values:** respect; tolerance and acceptance	**Citizenship issues:** legal awareness **Non-discrimination issues:** discrimination against people with special needs
LESSON 4 How to search online	• Safe online searches • Choosing key words for an online search	**Learning to be:** communication; self-management **Learning to know:** critical thinking	**Personal values:** independence	**Issues of globalization:** technological awareness
LESSON 5 How to check whether information online is true	• Reliable and unreliable online sources • The Egyptian Knowledge Bank	**Learning to know:** critical thinking	**Academic values:** curiosity; objectivity	**Issues of globalization:** digital citizenship
LESSON 6 Who can help you with online problems?	• Online bullying and inappropriate content • What to do about online problems	**Learning to do:** decision-making **Learning to live together:** empathy		**Citizenship issues:** legal awareness **Issues of globalization:** digital citizenship
LESSON 7 My personal digital safety plan	• Identifying and creating strong passwords • The importance of good anti-virus software • Protecting devices from possible online dangers	**Learning to know:** creativity; critical thinking	**Academic values:** objectivity	**Issues of globalization:** technological awareness
LESSON 8 Practicing what you learned	• Researching and presenting a topic safely and effectively	**Learning to do:** collaboration	**Co-existence values:** participation **Personal values:** independence	**Issues of globalization:** technological awareness

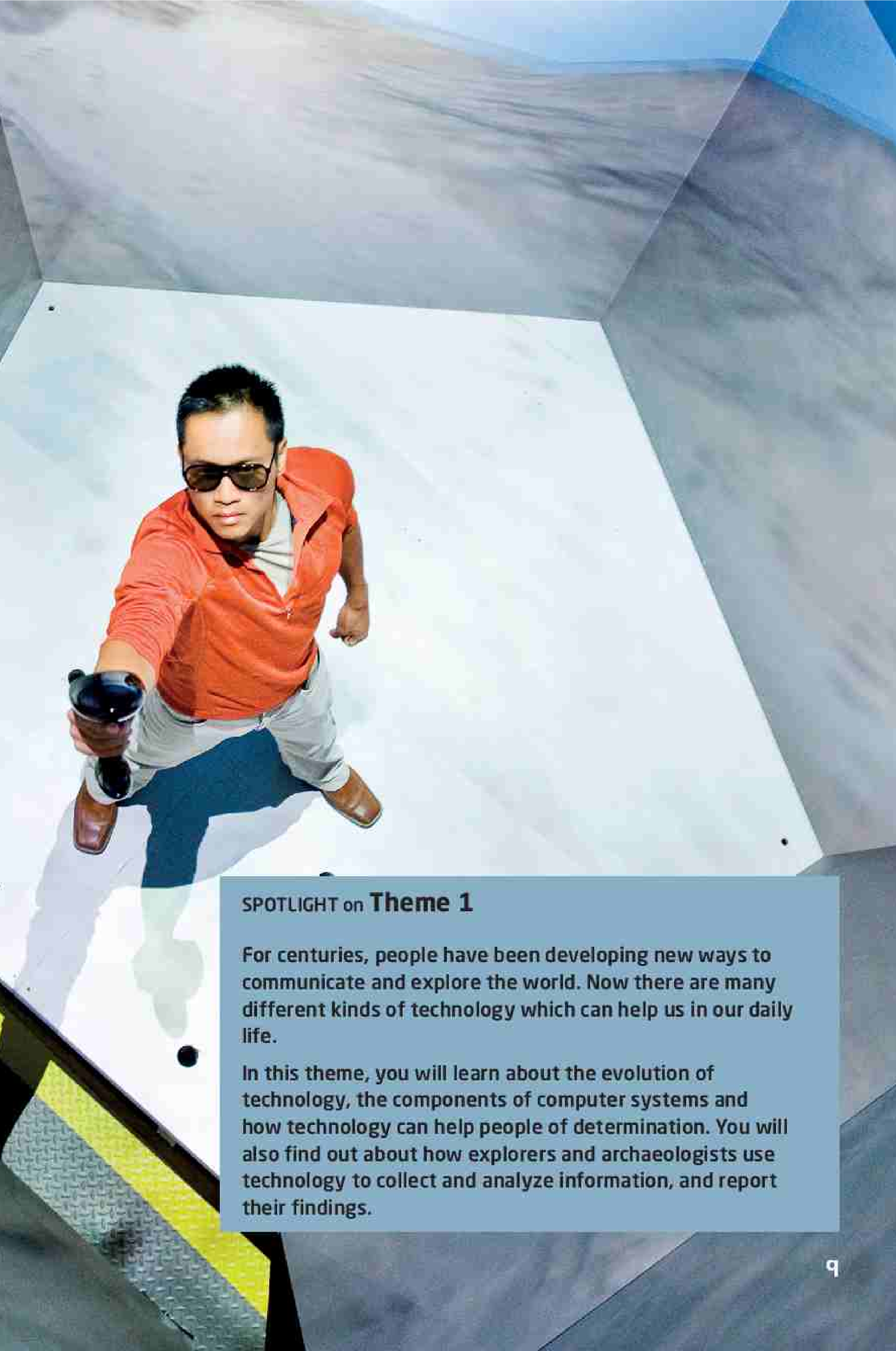

THEME
I

The role of ICT in our lives

ESSENTIAL QUESTION:

How can we use technology effectively?

An archaeologist examines digital projections inside StarCAVE 3D Virtual Environment, San Diego.



SPOTLIGHT on **Theme 1**

For centuries, people have been developing new ways to communicate and explore the world. Now there are many different kinds of technology which can help us in our daily life.

In this theme, you will learn about the evolution of technology, the components of computer systems and how technology can help people of determination. You will also find out about how explorers and archaeologists use technology to collect and analyze information, and report their findings.

LESSON 1 EXPLORER IN ACTION

Objectives

By the end of the lesson, I will be able to:	After the lesson, check the correct box: **I can . . .**		
• Identify some technology used to explore the Earth.	Very well	OK	Need more work
• Explain the different terms for technology.	Very well	OK	Need more work
• Describe how technology can be used to search for things under the ground.	Very well	OK	Need more work

Engage

What different kinds of technology can be used to explore the Earth? What do people wish to find when they explore? What do archaeologists wish to find when they are exploring?

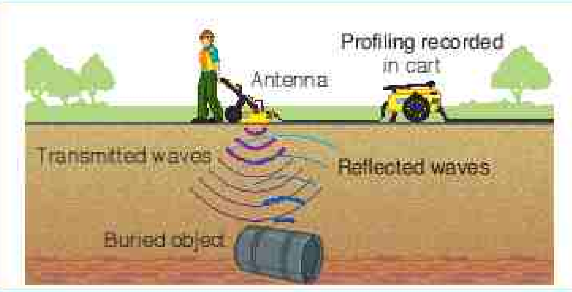
Learn

Albert Lin is an archaeologist. He uses different tools to explore archaeological sites without digging. These tools are useful because sometimes archaeologists cannot dig. This can save time, cost and effort. Other times, archaeologists may not know where to dig. They may need to do a survey above ground. They can use this survey to decide on which places to research.

There are many tools which Albert Lin can use. He can use photographs from satellites and drones. To find an object, he can use GPS. Once he finds something, he can search under the ground. To do this, he can use magnetometers and ground penetrating radar.



Here are some tools archaeologists use to explore the earth:

	**Ground penetrating radar** This radar can discover objects buried underground.
	**Global positioning system (GPS)** This is a way to find the location of something using satellites.
	**Magnetometer** This measures a magnetic field. It can find metal underground

Video

Watch the video about Albert Lin exploring Tikal city. What tools did he use? How did they let him see what was hidden by trees?

Explore

You don't have to be a scientist, engineer, archaeologist, or even a grown-up, to use technology! Research different technology by searching online and talking to your teacher, family or friends. What kind of technology would you use to help you explore an area? Explain why you chose it and how you would use it to help you to explore.

Review

1. What technological tools can archaeologists use on their expeditions?
2. Can you think of some examples of things these technological tools could be used to find?

Self-assess

Go to the Objectives at the beginning of the lesson.
Check the correct **I can . . .** box.

LESSON 1 EXPLORER IN ACTION

Life skills

1 Read and answer

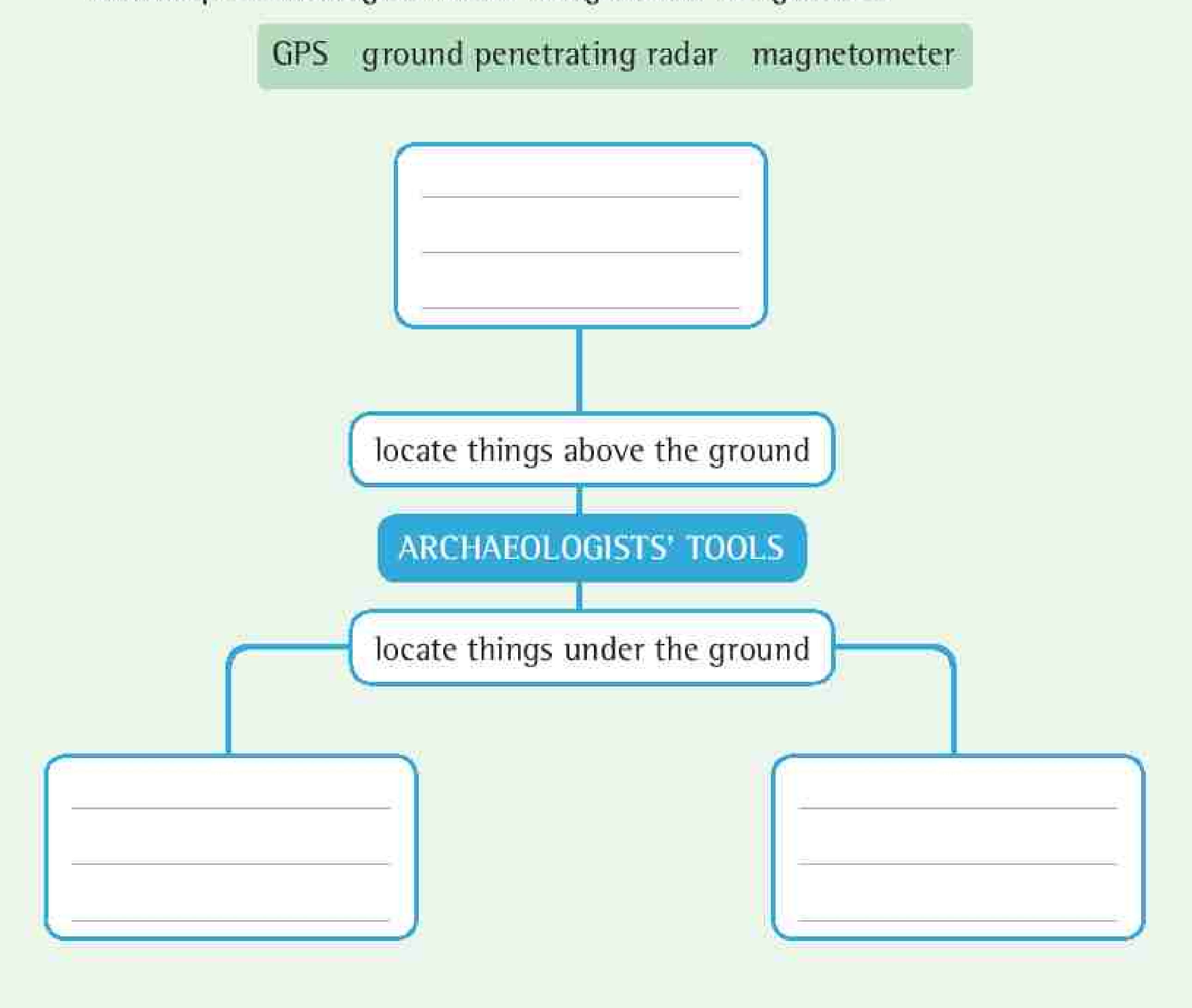
In your opinion, what are the most important skills for an engineer? In your opinion, what are the most important skills for an archaeologist?

Graphic organizer

2 Read and complete

Which tools help archaeologists locate things above the ground? Which tools help archaeologists locate things below the ground?

GPS   ground penetrating radar   magnetometer



Critical thinking

3 Think and answer

Read the scenarios below. Decide which tools from Exercise 2 could be used for each scenario.

1. You want to see if there are any old coins buried underground.

____

____

2. You receive a message from a friend who is lost and you want to try to find them.

____

____

3. You want to find out if there are any old buildings under the ground.

____

____

4 Discuss in pairs

1. Mr. Lin uses his engineering experiences in his archaeological work. Think of other subjects or backgrounds which might be useful for an archaeologist.
2. Technology has become very advanced in the last fifty years. Think about the next fifty years. What changes do you think we will see in technology? How might they help archaeologists?

5 Think and answer

Imagine you are planning an archaeological expedition to find the remains of a city buried in the desert. Write a short paragraph to explain what technology you will use for your expedition and how you will use it.

For our archaeological expedition, we will need to use ...

LESSON 2 The evolution of technology

Objectives

By the end of the lesson, I will be able to:	After the lesson, check the correct box: **I can . . .**		
• Discuss the history of ICT.	Very well	OK	Need more work
• Discuss how technology is used in our daily life.	Very well	OK	Need more work
• Improve my typing speed.	Very well	OK	Need more work

Engage

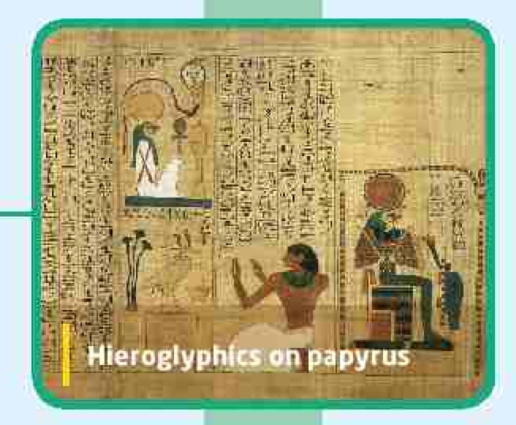
What are some ways you can record information?
What is your favorite way of communicating with others?

Learn

Technology has certainly come a long way! Look at the timeline and read about what happened in each age of technology.

3000 BCE–1450 CE

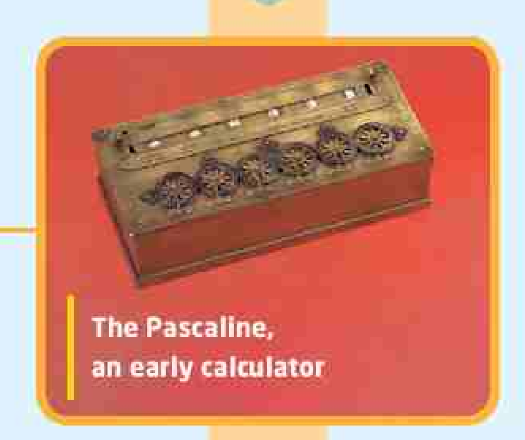
The Pre-mechanical Age: During this age, people started to communicate through pictures like hieroglyphics and later by words and numbers. People would record lots of information about agreements made. These documents are key to understanding history. Many of them are now available online, such as on the Egyptian Knowledge Bank.



Hieroglyphics on papyrus

1450–1840

The Mechanical Age: During this age, people recorded a tremendous amount of information. This led to a desire to make it easier to record and share. There was a technology explosion! One invention was a printing process which made it easier to make books and another was the Pascaline which was an early calculator.



The Pascaline, an early calculator

1840–1940

The Electro-Mechanical Age: This was the beginning of communication as we know it today. During this age, electricity was first used. This allowed many new types of inventions such as the telephone. The first digital computer was also produced. It was 8 feet high, 50 feet long, 2 feet wide, and weighed 50 tons!



An early digital computer

1940–present

The Electronic Age: This is considered the Information explosion age. Inventions and improvements are happening at a staggering pace. A key advancement in this age are personal computers or laptops. Satellites and GPS are also important. They help us locate things and communicate with people around the world instantly using email and instant messages.



A satellite

Explore

The average 10-year-old can type between 30 and 40 words per minute. Type a paragraph from this page. How many words can you type per minute? Practice and see if you can improve!

Review

1. Look at the timeline and the pictures. What are the different ways technology has helped people communicate?
2. How do you use technology in your school, your home, and your community?

Self-assess

Go to the Objectives at the beginning of the lesson. Check the correct I can . . . box.

Learn by doing

LESSON 2 The evolution of technology

Comprehension

1 Look and match

Complete the table with the information from each box.

The Electronic Age
The Electro-Mechanical Age
The Mechanical Age
The Pre-Mechanical Age

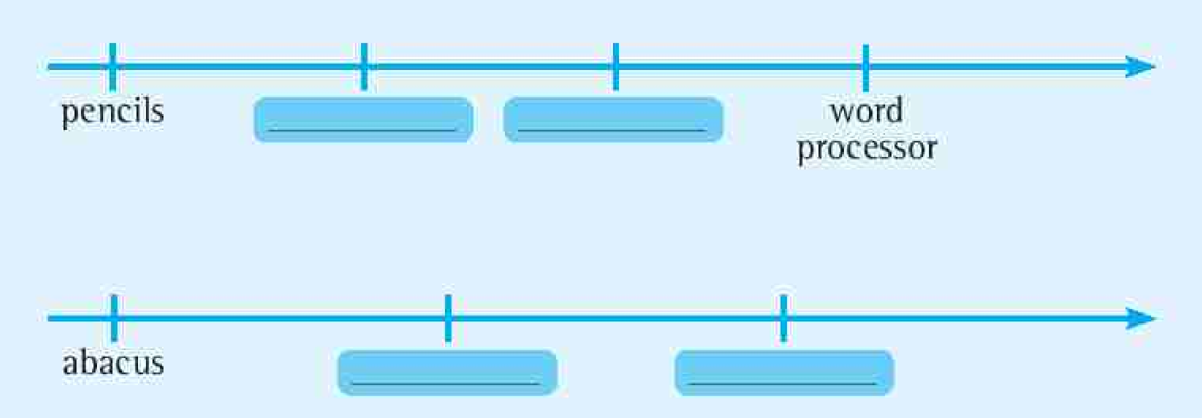
a. printing machine, calculator, typewriter
b. satellite, smartphone, online maps, word processor
c. pens, pencils, parchment, paper, abacus
d. telephone, telephone lines, record player

Dates	Ages of technology	Inventions
3000 BCE-1450 CE	The Pre-Mechanical Age	
1450-1840		
1840-1940		
1940-present		b

Graphic organizer

2 Think and write

Think about how technology develops. Look at Exercise 1 again. Complete the timelines showing how technology has developed



Issues and challenges

3 Practice and write

Let's measure our speed at typing and writing. Work with a partner and practice typing and writing. Measure your speed each time.

Type/write this sentence:

Eat healthily, live happily, respect all and be yourself.

	Attempt 1	Attempt 2	Attempt 3
writing on paper			
typing on a cell phone (if available)			
typing on a computer keyboard			

Critical thinking

4 Think and answer

Read the scenarios. What method of communication would you choose in each situation? Write your answer and explain why.

1. Your friend asks you if you can meet tomorrow. You need to send him/her a short reply to say yes.

___

___

2. Your grandmother lives in a different city. You want to tell her about what you learned in school and what you want to do when you visit her.

___

___

3. You want to send a short message to your cousin to say happy birthday.

___

___

ICT and me

5 Read and answer the questions

1. What kinds of technology do you use at home? How do you use them?

___

___

2. What kinds of technology do you want to use in the future?

___

___

LESSON 3 Components of computer systems

Objectives

By the end of the lesson, I will be able to:

After the lesson, check the correct box: **I can . . .**

By the end of the lesson, I will be able to:			
• Explain the main components of computer systems.	Very well	OK	Need more work
• Identify input, output, and data.	Very well	OK	Need more work
• Describe different types of computer hardware.	Very well	OK	Need more work

Engage

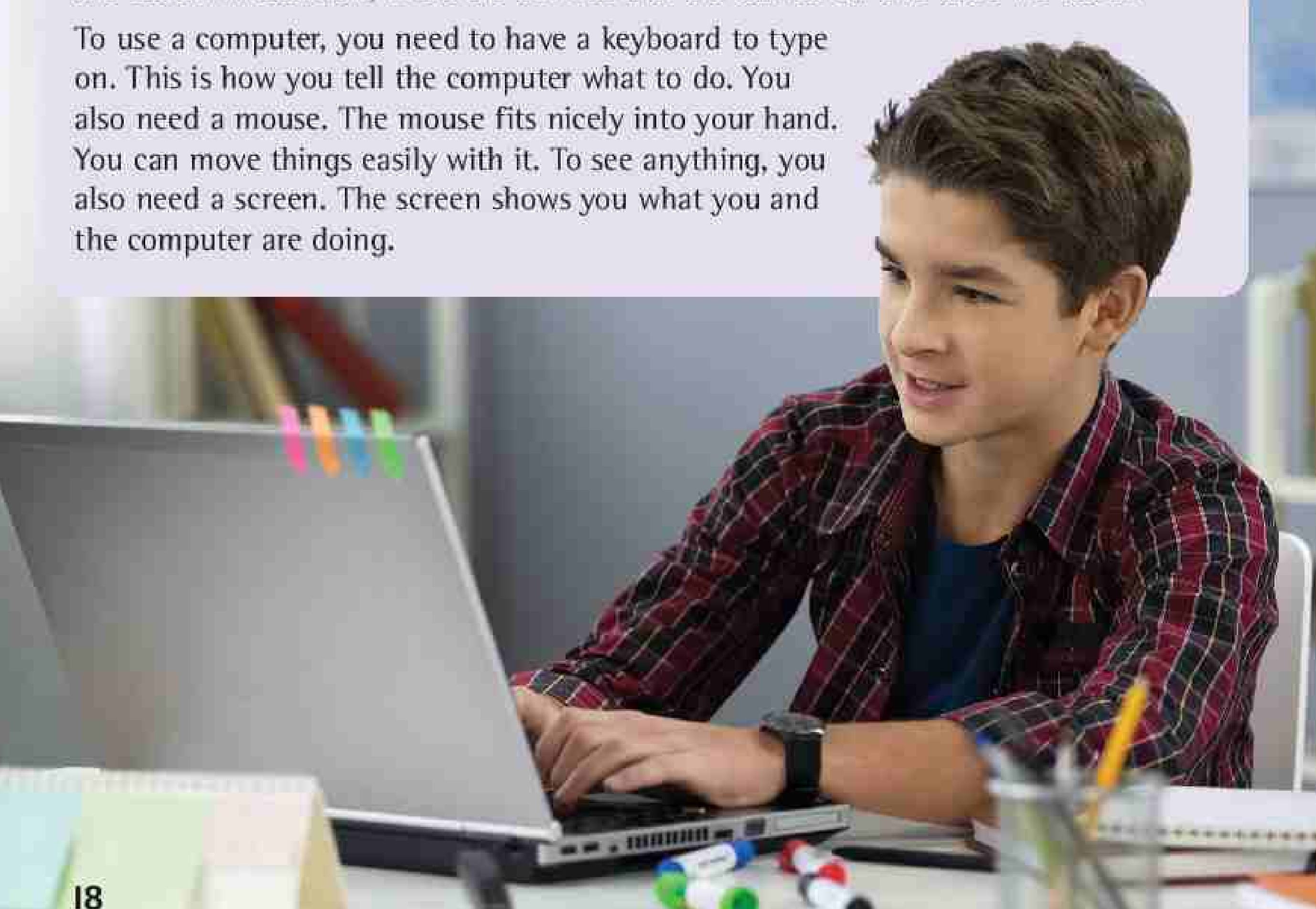
How can you use technology in your daily life? What do you need to know?

Learn

The computer is an electronic device for processing data. It can store information, restore it and process it. You might know that you can use a computer to write documents, send emails, play games and browse the internet. But you can also use it to edit or create data tables, PowerPoint® presentations, and even videos.

The shape of the computer and its components also differ according to the device's model and its manufacturing date. A personal computer differs from the laptop or the tablet. In addition, there are devices that are turned on and used via touch.

To use a computer, you need to have a keyboard to type on. This is how you tell the computer what to do. You also need a mouse. The mouse fits nicely into your hand. You can move things easily with it. To see anything, you also need a screen. The screen shows you what you and the computer are doing.



You may also want to have speakers to hear, a camera for people to see you and a microphone so they can hear you.

You can also prepare your own video or photo album, using one of the applications on your device (personal computer, laptop, tablet) by taking pictures or a video.

It is also important to understand the flow of information **into** or **out of** computer systems. For example, as users, we put data **into** a system using the keyboard. The system **gives** us information on the screen. We divide computer hardware into **input** and **output** devices.

Input	
Type of hardware component	Type of input data
Keyboard	Letters and numbers
Mouse or touchscreen	Directional data
Microphone	Sound and music
Camera	Images or video
Scanner	Text and images from paper

Output	
Type of hardware component	Type of output data
Screen	Visual information: text, images and video
Braille terminal	Text in Braille for blind people
Speaker	Audio
Speech synthesizer	Audio
Printer	Text and images on paper

The most important element of the computer system is you! Computers are only as good as the data we put in them. Users can also connect devices in the wrong way or use them incorrectly which produces an error, so be careful when connecting devices to your computer.

Explore

How many of the devices have you used before? Work with a partner. Think of other computer hardware. Do they provide input or output?

Review

1. Describe the main hardware components of computer devices and their purpose.
2. What do you think the most useful hardware components of a computer device are for an archaeologist?

Self-assess

Go to the Objectives at the beginning of the lesson.
Check the correct I can . . . box.

Learn by doing

LESSON 3 Components of computer systems

Comprehension

1 Look and write

Label the computer and its components with the words in the box.

keyboard	mouse	printer
scanner	screen	speaker



2 Think and write

What is the function of each component of the computer above? Complete the chart.

Functions	Components
Allows interaction with, and selection of, information	______
Displays visual data: texts, images, and videos	______
Allows input of images	______
Allows input of text	______
Allows input of text and images from paper	______
Allows output of text and images on paper	______
Allows input of audio	______
Allows output of audio	______

Issues and challenges

3 Look and write

Devices can also include components to help people of determination. Read the descriptions below and write the name of the component. Then answer the question.

1. This component allows blind people to use computers.

   ____

2. This component allows non-verbal people to speak.

   ____

4 Think and write

What other computer components might be helpful for people of determination? How can they help?

____

____

ICT and me

5 Think and answer

Read the questions below and think about your family, your home and your school. Discuss your answers with a partner and then write.

1. Do your family and friends use computers? What do they use them for?

   ____

   ____

2. When might you use the following components on a device?

   Camera: ______________________________
   Microphone: ______________________________
   Speaker: ______________________________

3. Which component do you think is more useful: a printer or a scanner? Why?

   ____

   ____

4. Lots of modern electronic devices have very small computers or computer components in them! For example, many new cars have computer components which can tell the driver if there is a problem with the engine. Can you think of some other devices which aren't computers but use computer components?

   ____

   ____

LESSON 4 Software and operating systems

Objectives

By the end of the lesson, I will be able to:	After the lesson, check the correct box: **I can . . .**		
• Explain the basic functions of operating systems and software.	Very well	OK	Need more work
• Explain the difference between hardware and software.	Very well	OK	Need more work

Engage

How does a computer communicate and complete your commands?

Learn

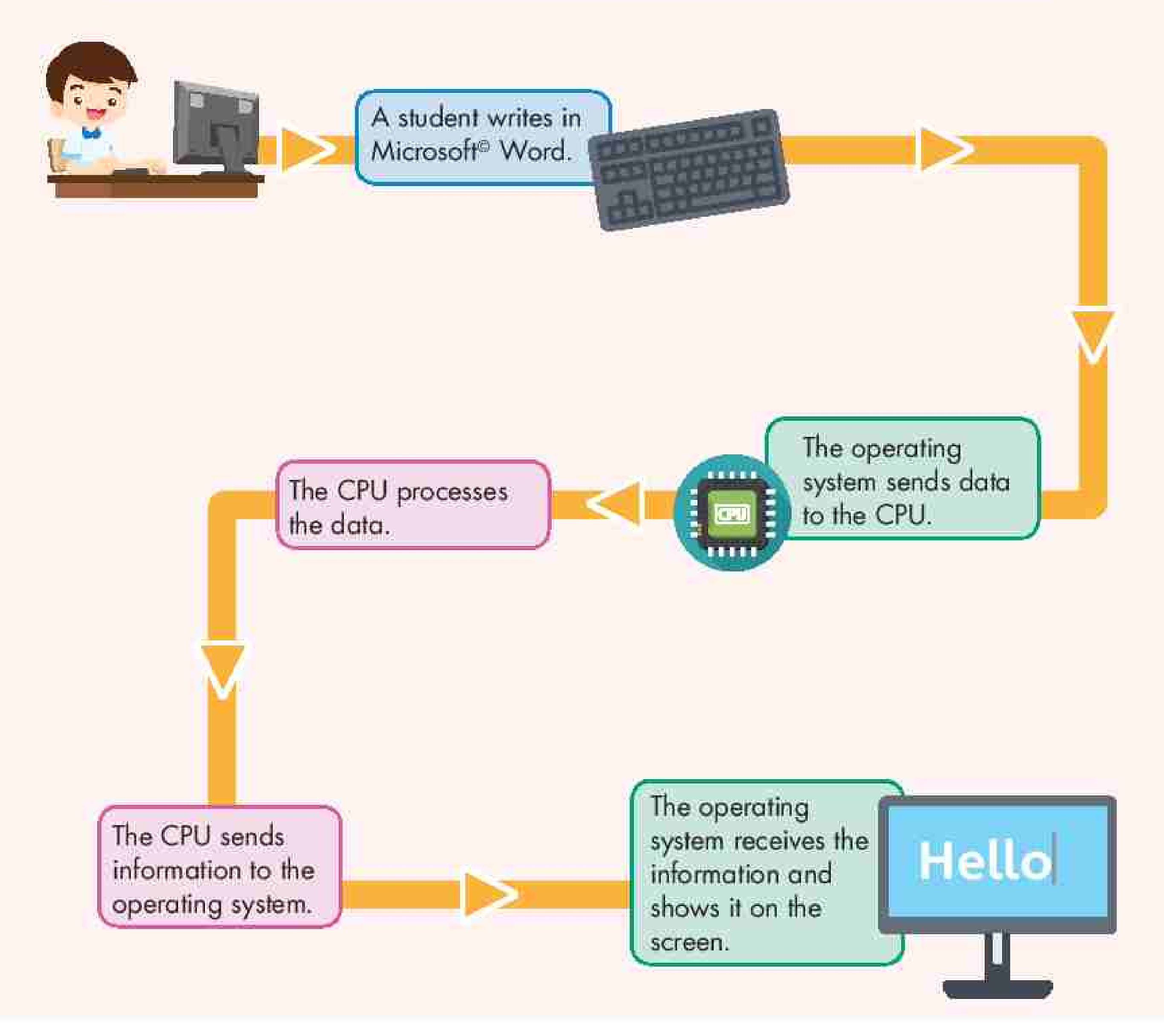
We do many things with our devices. We play games, write notes, and go on the internet. But how does that all happen?

Imagine you want to write a report for school. Once you log on to the computer, what do you do? The first thing you need to do is to ask the computer to do something. You might open a word processing program like Microsoft® Word which is a type of software. This application tells the computer's operating system, which is another type of software, like Windows®, to access the program and open it.

But that is only what you **see** happen. There is another key step that you do not see. The operating system talks to the Central Processing Unit (CPU). The CPU is a type of hardware. It controls what and how data is processed. This means that as you type, the program tells the operating system, which then asks the CPU to show this information on the screen. If the program has a problem before the operating system tells the CPU to save everything, you can lose your work. It is important to remember to save your work regularly.



The diagram below shows how data is processed in Microsoft© Word.



Explore

Work in groups to create a diagram similar to the above. It should show what happens at each stage when you are playing a game, using Microsoft® PowerPoint®. Label each step of the of the process with software or hardware, or both.

Review

1. What are the differences between hardware and software?
2. How would you explain how computers work to someone else?

Self-assess

Go to the Objectives at the beginning of the lesson.
Check the correct I can . . . box.

Learn by doing

LESSON 4 Software and operating systems

Comprehension

1 Look and complete

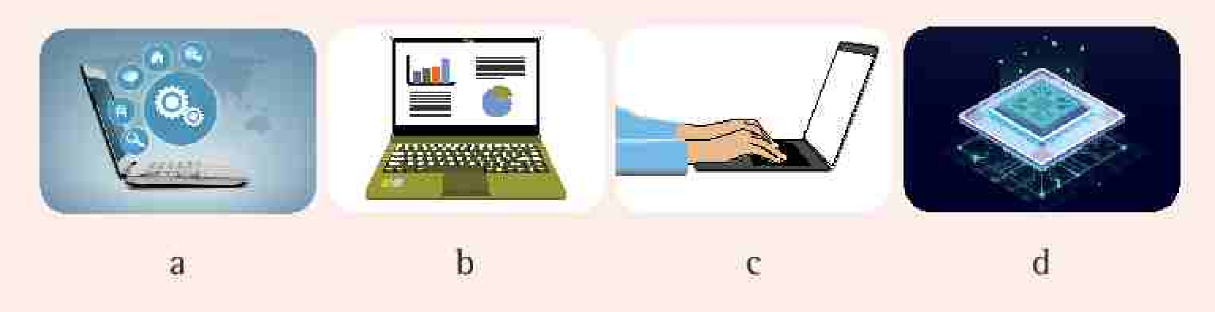
Write the words from the box in the correct column.

CPU gaming apps Google Chrome™ browser keyboard
PowerPoint® Microsoft Word® screen Windows®

Hardware	Operating systems	Application software
____________	____________	____________
____________	____________	____________
____________	____________	____________

2 Read and match

Read the steps and match them to the images. Write the letter.



a b c d

1. You open the program and start typing.	☐
2. The program receives the data and tells the operating system. The operating system interprets the data.	☐
3. The Central Processing Unit receives the data from the operating system. It processes the data and sends it back to the operating system.	☐
4. After the operating system sends the information to the program, the program puts the information on the screen.	☐

ICT and me

3 Think and draw

You are playing a game on your computer. Draw and label the relationship between you, the game application, the operating system, and the CPU.

4 Think and answer

Imagine you are transported back in time to before computers (PCs, laptops) were invented! How would you explain to them the importance of a computer, how this technology spread and how it works?

LESSON 5 Supporting people of determination

Objectives

By the end of the lesson, I will be able to:	After the lesson, check the correct box: **I can . . .**		
• Explain what assistive technology is.	Very well	OK	Need more work
• Discuss how technology improves the life of people of determination.	Very well	OK	Need more work
• I can suggest a technology that could improve people's lives.	Very well	OK	Need more work

Engage

How can technology help people of determination?

Learn

Assistive technology

We all use technology to help us in our daily life. There is also special type of technology called "assistive technology". Assistive technology helps people of determination with tasks that they find difficult.

Albert Lin has a limb difference but he doesn't let that stop him. He still does all of the things he did before including exploring many places around the world. He wouldn't be able to do this without the assistive technology of his prosthetic leg.



There are many types of assistive technology. Here are some examples:

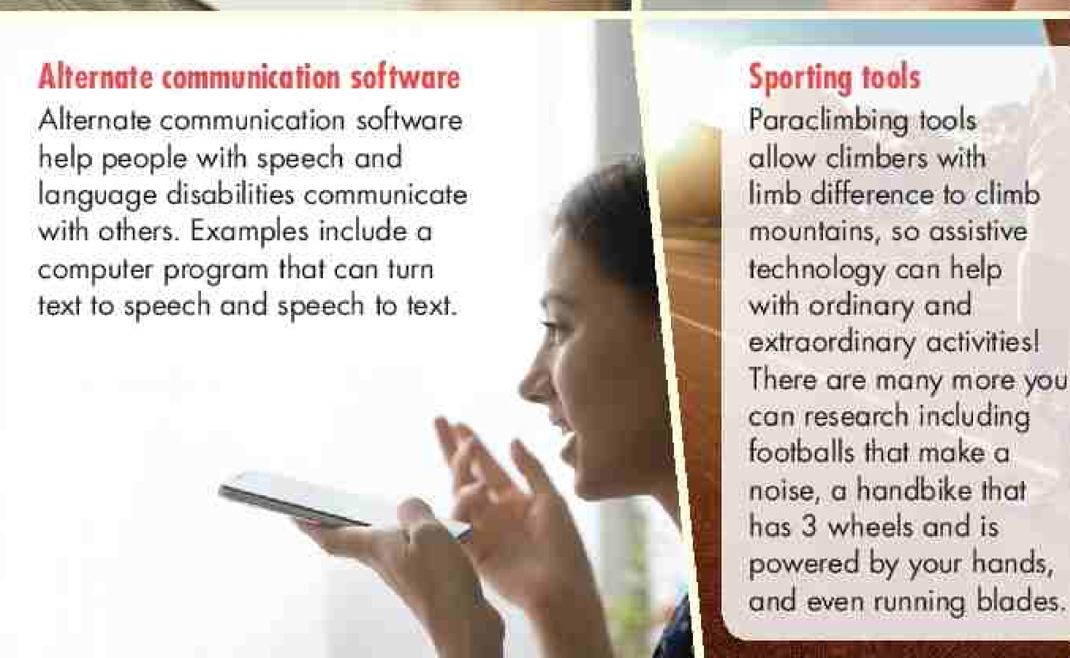


Screen magnification software

This software enlarges everything on a computer screen, from words to images. It allows those with poor vision to interact with a computer.

Hearing aids

Hearing aids help people who have trouble hearing. Models can now be connected to a person's mobile devices. Many also come with smartphone apps. Users can adjust their hearing aids using their phones.



Alternate communication software

Alternate communication software help people with speech and language disabilities communicate with others. Examples include a computer program that can turn text to speech and speech to text.

Sporting tools

Paraclimbing tools allow climbers with limb difference to climb mountains, so assistive technology can help with ordinary and extraordinary activities! There are many more you can research including footballs that make a noise, a handbike that has 3 wheels and is powered by your hands, and even running blades.

Explore

Think like an inventor! Imagine a new product that could help people of determination. Draw a picture of your invention. Describe what it would do and why it would be helpful.

Review

1. What are the different ways technology has helped people of determination?
2. How can we make the lives of people of determination better beyond just technology?

Self-assess

Go to the Objectives at the beginning of the lesson.
Check the correct **I can . . .** box.

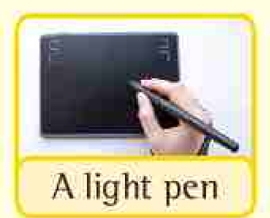
Learn by doing

LESSON 5 Supporting people of determination

Comprehension

1 Discuss in pairs

We all use technology every day. Look at the technologies below and circle the ones which you have used today. What did you use them for? Discuss with a partner.


A light pen


Glasses


A computer


An elevator


A cell phone


A car


A ball


A printer

Issues and challenges

2 Think and answer

How can each of these assistive technologies be useful for people? Who might find them most useful?

1. Sports balls that make a noise

____

____

2. Cell phones with large buttons

____

____

3. Hearing aids

____

____

4. Screen magnification software

____

____

5. Motorized wheelchairs

____

____

3 Read and complete

Stephen Hawking was a famous scientist who used assistive technology to help him communicate. Read about how he made use of speech synthesizer technology and put the steps in order.

a. When I have made a sentence, the computer sends it to a speech synthesizer. ☐

b. I look at a screen. There are words on the screen. ☐

c. I can press a switch in my hand. In this way, I select the words. ☐

d. The speech synthesizer changes the words into an artificial voice, so people can hear what I want to say! ☐

e. I can't speak so I communicate using a computer system in my wheelchair. ☐

Stephen Hawking

ICT and me

4 Think and answer

People of determination can have difficulty doing some tasks, but assistive technology can help them enjoy the same activities as everyone else. Read and answer the questions.

What are three things that you enjoy doing?	Why might this activity be difficult for a person of determination?	What kinds of technology might help a person of determination to do this activity?

What can you do to help people of determination?

___

___

___

LESSON 6 Common ICT problems and solutions

Objectives

By the end of the lesson, I will be able to:	After the lesson, check the correct box: **I can . . .**		
• Discuss ICT problems I've experienced at school or at home.	Very well	OK	Need more work
• Discuss how people experience problems with technology.	Very well	OK	Need more work
• Suggest solutions to common ICT problems.	Very well	OK	Need more work

Engage

What ICT problems have you experienced at school or at home?

Learn

ICT tools (like a computer, tablet or laptop) can help you do a lot of tasks. These can include work your teacher gives you, research of information online, and writing school reports and homework using Microsoft Word®. You can also use these devices to play games. However, these devices might sometimes experience a temporary breakdown or failure that prevents you from turning them on or using them to write.

Here are some technological problems you might find when using a computer and some possible solutions for them. Do you think there are other solutions to these problems?

PROBLEM: AN APP WON'T OPEN

Possible solutions for a Windows® PC: Restart your computer and try again. If the app still won't open, check that your software is up to date. If you still have problems, uninstall and reinstall the app.

If you cannot solve the problem, ask your teacher or family for help.

PROBLEM: THE MOUSE CURSOR ISN'T WORKING

Possible solutions for a Windows® PC: Make sure you connect the mouse cable to the correct place in the motherboard. It is best to restart your device after that. If the problem isn't solved, there might be a defect in the mouse and you might need to replace it.

If you cannot solve the problem, ask your teacher or family for help.

PROBLEM: YOU CAN'T FIND A FILE

Possible solutions for a Windows® PC:
Check your Downloads folder. If you're looking for a Microsoft® Word file, look in your Documents folder. If you're looking for a photo, look in your Pictures folder. Or, try doing a search using the search box next to the Start button.



If you cannot solve the problem, ask your teacher or family for help.

PROBLEM: YOUR SCREEN FREEZES

Possible solutions for a Windows® PC: Press and hold the "Ctrl", "Alt", and "Del" buttons together. If this option doesn't work, try to power off your computer and restart.

If you cannot solve the problem, ask your teacher or family for help.

PROBLEM: THE KEYBOARD ISN'T TYPING

Possible solutions for a Windows® PC: Make sure you connect the keyboard cable to the correct place in the motherboard. It is best to restart your device after that. If the problem isn't solved, there might be a defect in the keyboard and you might need to replace it.

If you cannot solve the problem, ask your teacher or family for help.

Explore

Interview classmates. Ask them what ICT problems they have experienced at school or at home. Then choose one of the problems and think of ways to solve it.

Review

1. What advice would you offer your classmates when using technology?
2. What would you do if your school or home computer had a problem you couldn't solve?

Self-assess

Go to the Objectives at the beginning of the lesson.
Check the correct **I can . . .** box.

Learn by doing

LESSON 6 Common ICT problems and solutions

Comprehension

1 Look and complete

Decide what the problem is based on the solution provided.

Solution	Problem
Press and hold the "Ctrl", "Alt", and "Del" buttons.	
Do a search using the search box next to the Start button.	
Restart your computer and try opening it again.	
Uninstall and reinstall the app.	

2 Read and answer

Suggest solutions to these ICT problems.

1. Sara is doing her homework on her Windows® PC. Suddenly, the screen freezes. She presses and holds the "Ctrl", "Alt", and "Del" buttons, but that doesn't work. What else could she try to do?

2. Maged wants to send a file to his friends, but he can't find it on his Windows® PC. What solutions could he try?

3. Reem wants to listen to music on her favorite music app on her laptop. However, when she clicks on it, it doesn't open. What solutions could she try?

ICT and me

3 Think and answer

Write about an ICT problem that you experienced before. How was it solved?

4 Think, draw and answer

1. Invent your own device! What does it look like? Draw a picture of it.

2. What does it do? Write a short description.

3. What are possible problems that someone using your device might experience?

4. How can the problems experienced be solved?

LESSON 7 Collecting, analyzing, and graphing data

Objectives

By the end of the lesson, I will be able to:	After the lesson, check the correct box: **I can . . .**		
• Identify digital tools that I can use to organize data.	Very well	OK	Need more work
• Present information on a student issue by collecting, analyzing, and graphing data.	Very well	OK	Need more work
• Discuss common student issues with my classmates.	Very well	OK	Need more work

Engage

How can digital tools help you organize information?

Learn



Scientists and archaeologists can search to solve problems. They collect, analyze and graph data. Below are some ways to collect, analyze and graph data.

COLLECT You can collect data from a variety of sources. Common sources include:

- books and articles (digital or print)
- records (such as logs and reports)
- surveys
- experiments

It is very important that you are certain that the information you are collecting is accurate. Always be sure to use sources that can be trusted.

ANALYZE When you analyze the data you've collected, you review your findings. Then you interpret what those findings mean. You can use the data to find out what happened, why it happened, what is likely to happen next, and what should be done.

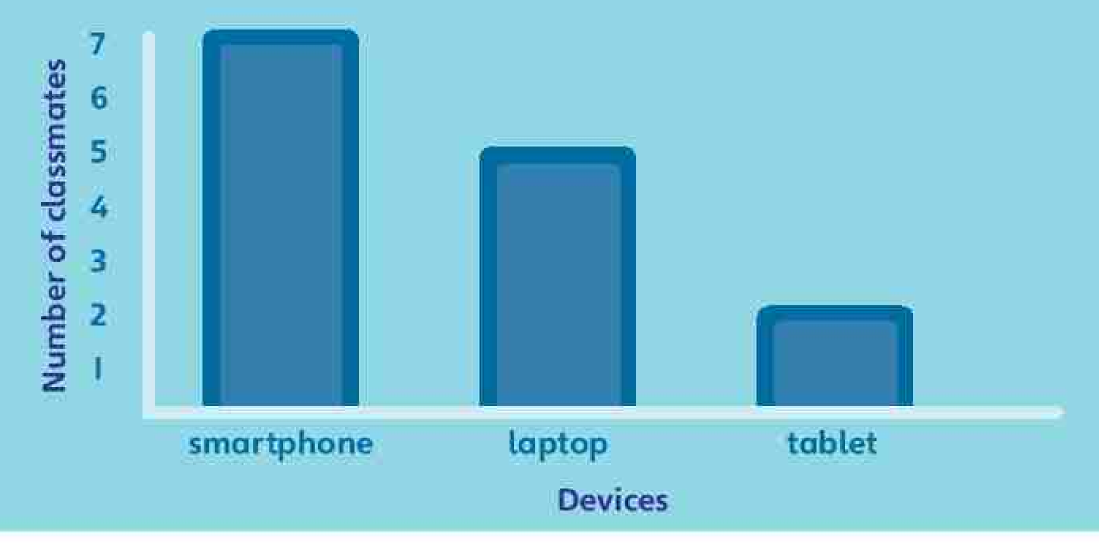
You may have a lot of data. The best way to interpret a lot of data is to look for trends in the information.

GRAPH Once you have analyzed the information you have collected, you are ready to graph the information. A common graph is a bar graph. Bar graphs clearly present and compare different categories of information. You can draw graphs on paper, or make them on a computer using software like Excel®.

EXAMPLE Nesma interviewed her classmates about what their favorite devices were. In total, she interviewed 14 classmates. She collected their answers and sorted them into groups.
This is the information she analyzed:

- Seven classmates said their favorite device was a smartphone.
- Five students said their favorite device was a laptop.
- Two students said their favorite device was a tablet.

After Nesma analyzed the information, she graphed it:



Explore

Interview your classmates. Ask them what type of technology they find the most difficult to use. Using what you learned above, collect, analyze, and graph your information.

Review

1. Explain how you can collect, analyze, and graph data.
2. Discuss with your classmates possible solutions that can help make difficult types of technology easier to use.

Self-assess

Go to the Objectives at the beginning of the lesson.
Check the correct I can . . . box.

Learn by doing

LESSON 7 Collecting, analyzing, and graphing data

Comprehension

1 Look, circle and write

There are a variety of sources you can use to collect data, or gather information. Look at the types of sources below and circle the ones you have used.

books | articles | reports

surveys | experiments | interviews

other ______________

2 Think and answer

Were the sources you circled above in digital, print, or both?

____

Research

3 Think and answer

Let's take a survey! First, prepare your survey with your teacher's help.

1. What will be the subject of your survey?

____

2. How will you present your information?

____

____

3. Choose friends, family members, or classmates to answer your survey questions. List the people you will speak to below.

____

____

4. Write the questions you will be including in your survey.

____

____

____

____

4 Write a summary

Next, conduct your survey, and analyze the results. What are the key findings?

____

____

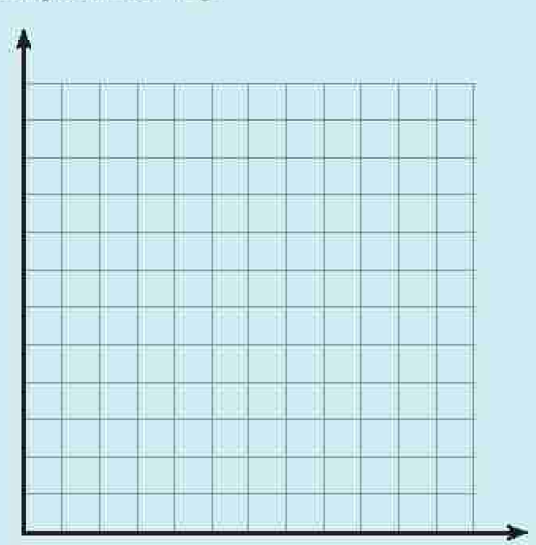
____

____

____

5 Make a graph

Use the information you analyzed to create a (digital or printed) graph, showing the results of your survey.



ICT and me

6 Think and answer

Digital tools are useful when it comes to collecting, analyzing, and graphing data. Which of the following programs do you think are best for analyzing data? Why?

- a word processor (e.g. Microsoft Word®)
- presentation software (e.g. PowerPoint®)
- a spreadsheet (e.g. Excel®)

____

____

____

____

____

LESSON 8 Reporting findings

Objectives

By the end of the lesson, I will be able to:	After the lesson, check the correct box: **I can . . .**		
• Discuss different ways to communicate electronically.	Very well	OK	Need more work
• Explain how to use different types of technology to communicate with others.	Very well	OK	Need more work
• Communicate electronically with students and teachers.	Very well	OK	Need more work

Engage

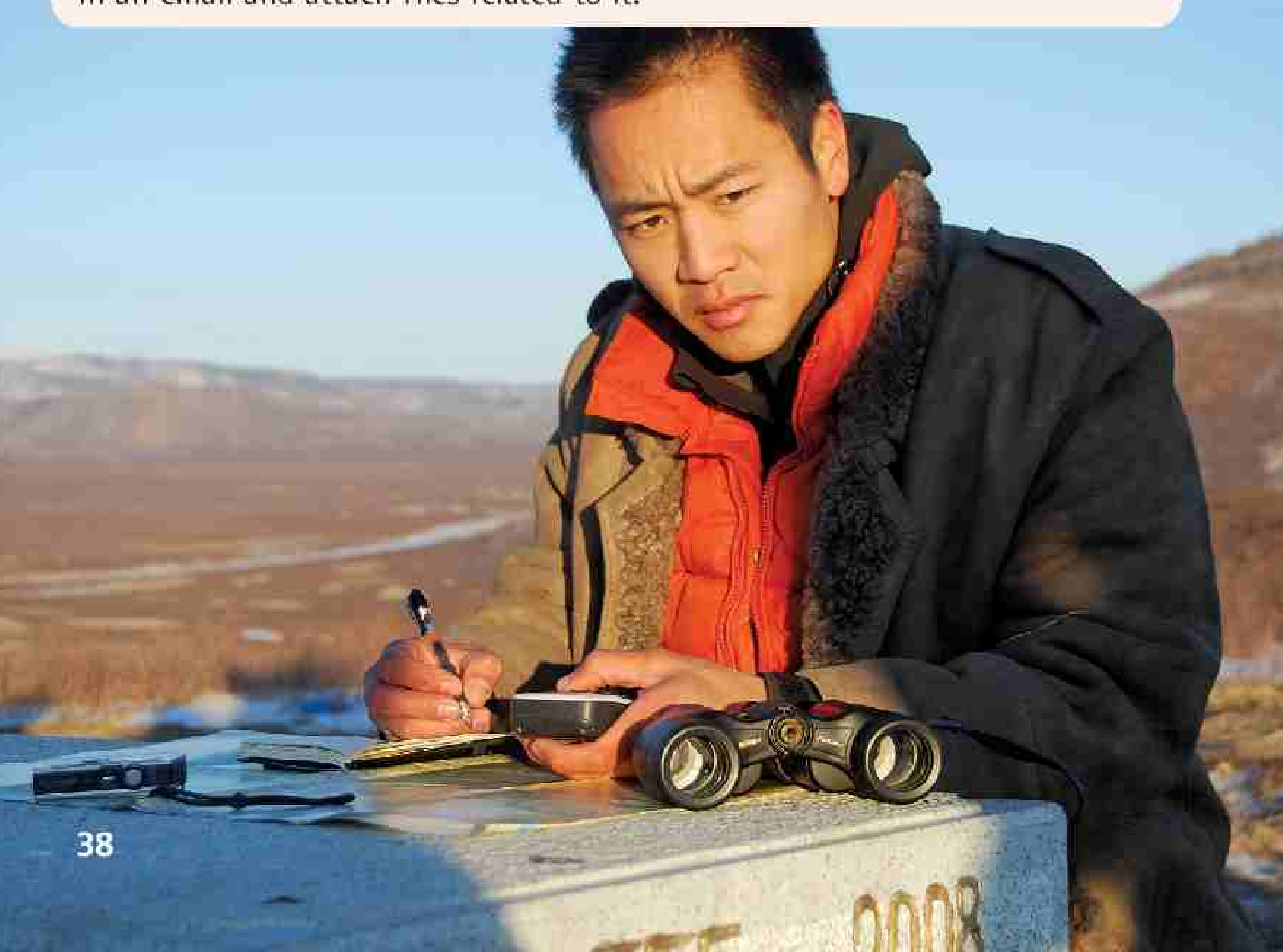
Why is it important to be able to communicate electronically with others?

Learn

Researchers report the information they gather in many different ways. Below are some ways archaeologists report their information:

- blogs
- published articles
- social media sites
- interviews
- TV programs

A common way to report data is through email. You can write a short report in an email and attach files related to it.



From: Nesma **To:** Mona

Subject: Survey results

Hi, Mona!

Today, I interviewed 14 of my classmates. I asked them what their favorite devices were. I got many interesting responses! Smartphones were the most popular choice. Seven classmates chose this device. Five students said their favorite device was their laptop. Two said their favorite device was their tablet. Here is a graph showing the results.

See you soon

Nesma

7
6
5
4
3
2
1

smartphone laptop tablet

Other ways to report information are video chats and even text messaging.



Explore

Review the topic you graphed in the previous lesson (7). Use the information you gathered to write an email to your teacher about the topic and include your graph.

Review

1. Compare and contrast the different ways you can communicate electronically.
2. Which method of communication do you use most to report information? Why?
3. Can you think of other methods of communication you can use to report information?

Self-assess

Go to the Objectives at the beginning of the lesson. Check the correct **I can . . .** box.

Learn by doing

LESSON 8 Reporting findings

Comprehension

1 Read, think and write

There are a variety of formats you can use to report findings. Below are some examples. Make notes next to each format explaining how it can be used to report findings.

1. blogs: ______________________________
2. email: ______________________________
3. articles: ______________________________
4. social media sites: ______________________________
5. text messages: ______________________________
6. video chats: ______________________________
7. TV programs: ______________________________

Research

2 Read, think and answer

Online articles allow an individual or small group to express their thoughts to their audience. Some may just include text. Others will include visual media, like pictures or graphs. Create an online article using the information you gathered in the previous lesson (7). Report your findings. To prepare:

1. Create an interesting headline for your article.

   ____

2. Who will you invite to read your article? Friends? Family? Teachers? Classmates? Explain your choices.

   ____
   ____
   ____
   ____

3. How will you get and keep your audience interested in reading your article?

   ____
   ____
   ____
   ____

4. Write notes about how you will summarize your findings.

3 Create your online article

Use the space below to write your online article. Don't forget to include visuals, like pictures or graphs, to help report your information.

Critical thinking

4 Compare and contrast

In this lesson, you wrote an email and created an online article to report your findings. Compare and contrast the experience you had using these two methods. Include what you liked and didn't like about each method.

REVIEW Theme I

Vocabulary

1 Write and compare

Write a sentence for each set of words to explain the connection between them. Then compare your sentences with a partner.

1. keyboard and screen

2. operating system and CPU

3. survey and graph

Review Questions

2 Read and answer

1. Name two tools that archaeologists can use to explore the earth.
2. During which Age was electricity first used?
3. Write three devices that you would likely use during a video chat.
4. What is assistive technology? Write one example.
5. What is application software? Write one example.
6. Identify a common ICT problem, and what is one way it can be resolved?
7. What is the best way to interpret a lot of data?
8. Write three ways that researchers report data.

Critical Thinking

3 Think and answer

1. Which age of technology do you find the most interesting, and why?

____

____

2. Some people say that a CPU is like the brain of a computer. Explain why that description fits.

____

____

3. You have just completed your research, and you want to share the results with your friends. How would you share this information electronically? Explain your choice.

____

____

Essential Question

4 Think and complete

Think about the information that you have learned in this theme. How does it help you to understand how to use technology effectively? Complete the sentence with your own ideas.

After studying this theme, I know that I can use technology effectively because ____

____

Activity

5 Research, create, and show

Create your own exhibition about a type of assistive technology that you find interesting.

Find photographs or draw pictures of it. Then make labels and write captions for your photographs and illustrations. Include information about:

- what type of technology it uses
- how it works
- how it helps people of determination
- where you can find / buy / see it

Invite your classmates to visit your exhibition.

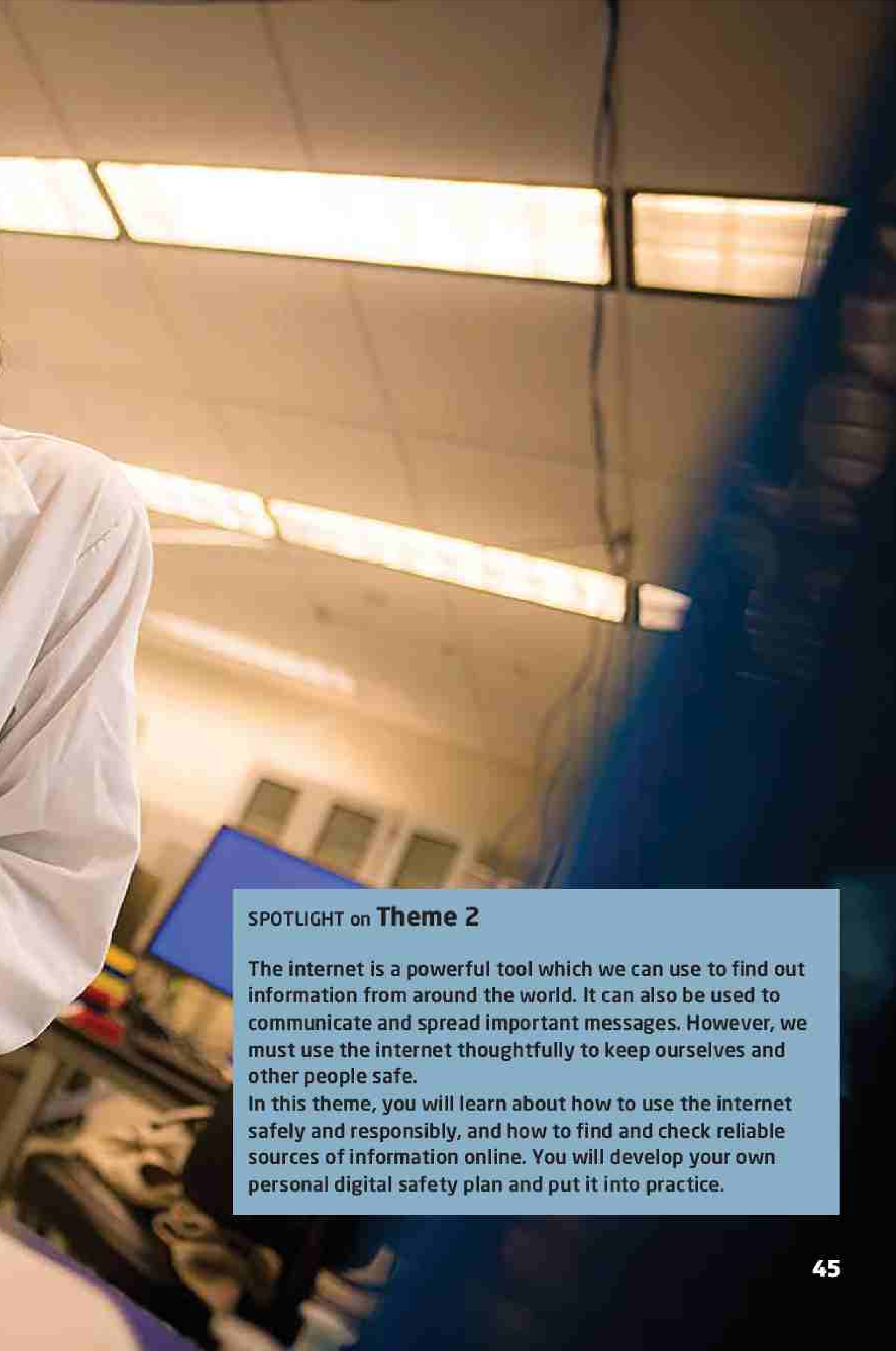
THEME 2

Digital safety and security precautions

ESSENTIAL QUESTION:

How can you be safe and use reliable sources when online?

A scientist studies a type of nut in a laboratory at the University of California San Diego.



SPOTLIGHT on **Theme 2**

The internet is a powerful tool which we can use to find out information from around the world. It can also be used to communicate and spread important messages. However, we must use the internet thoughtfully to keep ourselves and other people safe.

In this theme, you will learn about how to use the internet safely and responsibly, and how to find and check reliable sources of information online. You will develop your own personal digital safety plan and put it into practice.

LESSON I EXPLORER IN ACTION

Objectives

By the end of the lesson, I will be able to:	After the lesson, check the correct box: **I can . . .**		
• Talk about the importance of the internet in making the world a better place.	Very well	OK	Need more work
• Describe how technology can be used to communicate with other people (classmates, friends, teachers and family members).	Very well	OK	Need more work
• Explain why technological solutions must match people's lives.	Very well	OK	Need more work

Engage

How do you use the internet to find out more about things and people you care about?

Learn

The internet can give us access to information on all kinds of information. We can type a question into a search engine to find answers quickly and easily. However, it is important to check the information because it may not always be correct.

Once, when biologist Anika Ullah was at a wedding, she tried a dessert made from an unusual nut that she'd never heard of. She didn't know anything about these nuts, so she looked them up in an online encyclopaedia. She found many uses for the nuts, but also discovered that eating too many of these nuts can cause cancer.

Anika Ullah then did more research. She found scientific studies and reports on the internet. They were written by experts and gave her more useful information. Of course, she checked her online sources carefully.





The internet can also be used as a powerful tool to communicate with other people, especially when there is an important message that needs to be sent out. When Anika Ullah discovered that these nuts could be dangerous, she decided that she should talk to local communities about the issue, and to ground truth. Grounding truth is when you find out information directly from people or evidence. She visited people in the community and also used the internet to communicate with them.

Ms. Ullah wanted people to use these nuts more safely. By working with the people in the local communities, she could make films and start online campaigns to help them to lead healthier lives.

Video

Watch the video about Anika Ullah and her work in San Ysidro. How did she find out about the lemon trees? What did her research show her? What could be made to spread the message to the community?

Explore

If you found out about a dangerous food, how would you solve the problem? What research should you do? What tools do you need?

Review

1. Why is it important for scientists to reach out to people directly when they do research? How can they use technology to do this?
2. Why do you think it is important for technological solutions to find out more about people's lives?

Self-assess

Go to the Objectives at the beginning of the lesson.
Check the correct **I can . . .** box.

LESSON I EXPLORER IN ACTION

Life skills

1 Read and answer

What are some possible problems with finding out information online?

Graphic organizer

2 Read and complete

Complete this flow chart to show the sequence of activities when you research something online. Write the sentences in the box in the correct places in the flow chart.

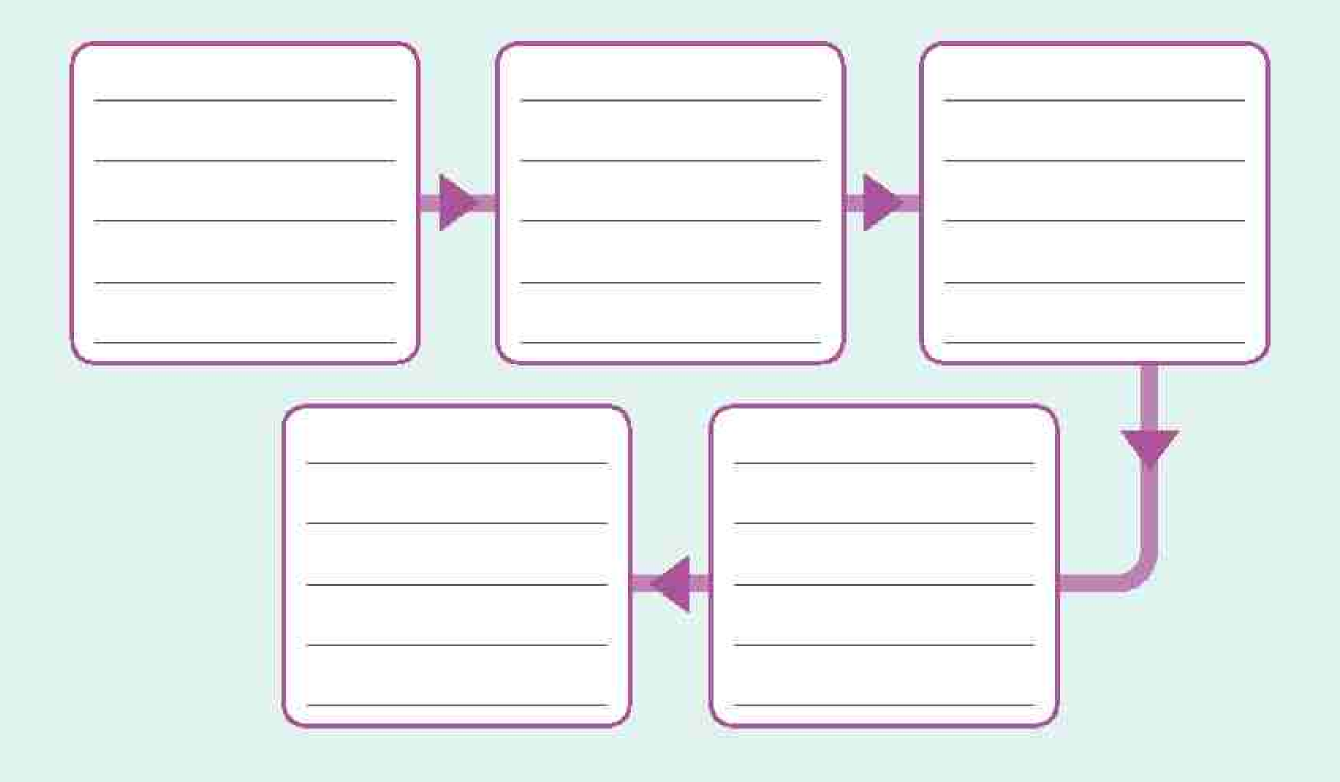
Cross check facts by trying to find them in more than one place.

Decide what information you want to find out.

Look carefully at the information that you have found.

Tell the reader where the information came from.

Think about the search terms or key words you will use.



Critical thinking

3 Think and answer

You can find out information by talking to people directly, or by finding information online. When you do research, you need to make sure that the information is accurate. Work in pairs to discuss the following questions.

1. How could you find out information about each of the following topics?
   a. Popular free time activities (sports, entertainment, etc.) for young people in different parts of Egypt.

   ____

   b. What games children play in other countries.

   ____

   c. How national days are celebrated across the world.

   ____

   d. How to improve access to clean water in Egypt.

   ____

2. Why might it be easier to find information about some areas of research than others?

   ____

   ____

ICT and me

4 Think and answer

Read the situation below. Write a short paragraph to describe how you can do some research for this project.

A museum, gallery or monument in your area wants more young people to visit it. Find out what kind of things might attract young people to this place and think about how you can tell them about it.



____

____

____

____

____

LESSON 2 Online dangers and how to be safe

Objectives

By the end of the lesson, I will be able to:	After the lesson, check the correct box: **I can . . .**		
• Describe online risks and dangers.	Very well	OK	Need more work
• Explain the importance of keeping personal information private.	Very well	OK	Need more work
• Discuss ways to be safe while online.	Very well	OK	Need more work

Engage

What do you already do to stay safe online?

Learn

Communicating online

There are many ways to communicate online. You can use computers, phones, or tablets.

People may use instant messaging, email, direct messages, and message forums to communicate. Be careful – some people communicate online to be unkind or to steal personal information.

Behave online as you would in person. Always be kind and honest when communicating with others. Be sure you know who you are chatting with. If someone is unkind or makes you feel unsafe, you can **block** the person.

Unsafe websites

Be careful when clicking on links. Don't click on links that you are unsure of. If you accidentally view an unsafe or inappropriate site, don't panic. Leave the site and tell your teacher or a family member who can help you feel safe.

When you **block** someone, that person cannot see your posts or contact you.



Some examples of **personal information** include your address, your name and the name of your school. Can you think of other examples?



Sharing data online

Don't share **personal data** online without asking your teacher or a family member if it is OK. If you share your personal data online, you may receive **spam** messages.

Check your privacy settings on social media sites. Make sure that only your friends and family can view your information. Always think before you post something, especially a photo or video. Ask yourself, *Am I sure this photo is appropriate? Could this embarrass or hurt me or others?*

Always think before you post about yourself or other people.

Spam mail includes unwanted messages to advertise products or gather more information from you. The messages may also include viruses. If an email includes an unfamiliar address, unknown links, or messages in ALL CAPITAL LETTERS, it might be **spam**.



When you are using the internet, you might want to **download** a file. This saves it to your computer so that you can look at it later, without being connected to the internet!

Downloading files

Think carefully before you **download** files. Some files have viruses. Viruses can damage your computer or be used to track your information.

Check the website before you download a file. Is it a trusted site? If you are not sure, you shouldn't download files from it.

Learning is power! Use what you learned to stay safe and happy while online.

Explore

Protect yourself while online. Work in a group to create a list of guidelines to help keep you safe. Which guideline is most important to you? Discuss with your classmates.

Review

1. Explain common dangers that you may face while online.
2. Go back to the Engage question. Based on what you read in Learn, is your answer still the same? Why?

Self-assess

Go to the Objectives at the beginning of the lesson.
Check the correct I can . . . box.

Learn by doing

LESSON 2 Online dangers and how to be safe

Comprehension

1 Read and complete

Complete the sentences. Use the words from the box.

block download instant messaging personal information spam

1. An email from an unknown address that includes advertisements is likely to be ______________.
2. When you ______________ a file, you save it to your device.
3. If you ______________ someone, they will no longer be able to contact you or view your account.
4. Think carefully before you share your address or other ______________ ______________ online.
5. You can use ________________________ to communicate with friends.

Life skills

2 Think and answer

You are setting up a new social media account. Who would you accept as a friend? Check. Then discuss your choices with a partner.



Name: Rami
From: unknown
Age: 23
☐



Name: Younis
From: school
Age: 9
☐



Name: Malak
From: my sister
Age: 12
☐



Name: unknown
From: unknown
Age: unknown
☐



Name: Amir
From: Younis' dad
Age: 32
☐

You're now going to create your 'online profile' for your social media account. Which information would you feel secure sharing with people on social media? Check the information you would feel comfortable sharing.

- telephone number ☐
- name ☐
- address ☐
- school ☐
- birthday ☐
- interests ☐
- favorite place ☐

Can you think of other personal information you would share with people on social media? Write it below.

____

____

ICT and me

3 Think and choose

Read the scenarios and check the boxes. There may be more than one correct answer.

1. You get a message from a stranger on your social media account. The message tells you to download a file to watch a funny video.

   What should you do?

   a. Download the video to watch later. ☐
   b. Ask a parent for help and don't open the file. ☐
   c. Delete and ignore the message. ☐
   d. Write a reply and say you can't wait to watch it. ☐

2. A friend sends you a strange picture that scares you.

   What should you do?

   a. Send the picture to all your friends. ☐
   b. Tell a parent. ☐
   c. Copy the picture to your computer. ☐
   d. Send a message back with an even scarier picture. ☐

Can you think of another online situation where you have different options about how to respond? What would you do?

____

____

____

LESSON 3 Using ICT tools in a healthy and ethical way

Objectives

By the end of the lesson, I will be able to:	After the lesson, check the correct box: **I can . . .**		
• Discuss communicating positive messages online.	Very well	OK	Need more work
• Explain what it means to use ICT tools ethically.	Very well	OK	Need more work
• Explain positive and negative effects of ICT tools.	Very well	OK	Need more work

Engage

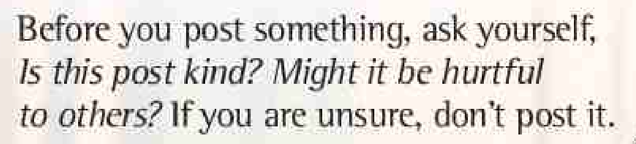
Media sources can use the internet to communicate important messages. What are some important messages you have seen online or on TV?

Learn

Posting online

When you **tag** someone, you identify that person in a post, photo, or video. Anyone who has access to your account can see it. The tag provides a link to the person's profile. It's important to be sure the person you're tagging is OK with this.

When you post on social media and tag your friends, make sure to ask them permission first. It shows that you respect their privacy.



Before you post something, ask yourself, *Is this post kind? Might it be hurtful to others?* If you are unsure, don't post it.

Crediting others

Whether you are looking for information to post online, or to include in a PowerPoint® presentation, it's important to **credit** sources that provide you with information that you share with others.

When you **credit** a source of information, you let others know where the information you are sharing came from.

Respecting the law

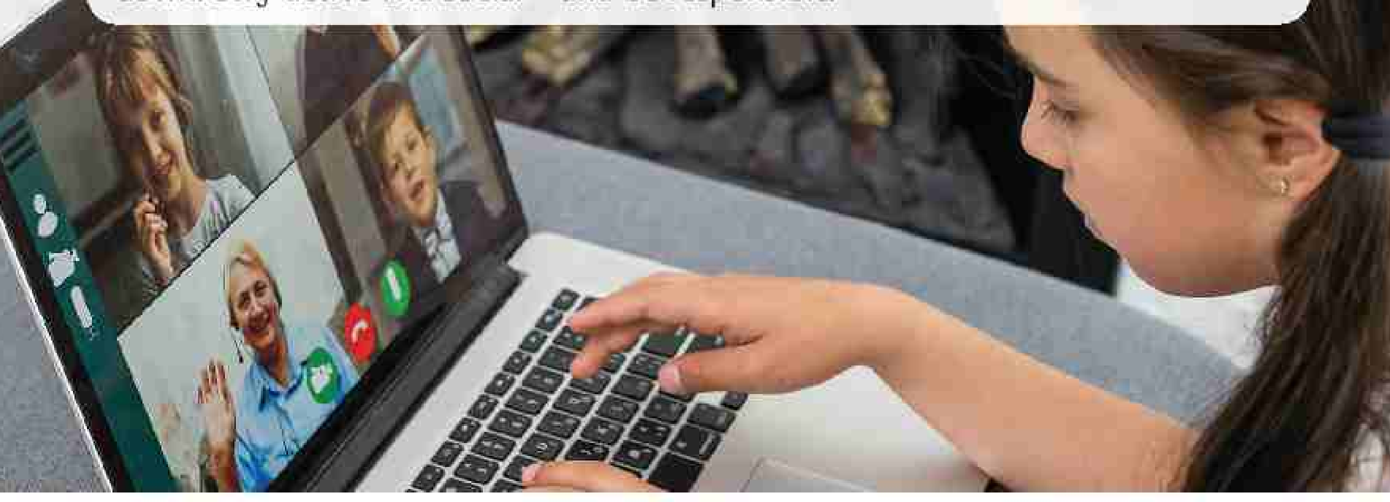
Whether you are posting online or researching topics, be sure to respect the law. Don't go on banned sites. Banned sites may publish inaccurate, immoral, and harmful material. Ask your teacher or a family member before you go on a new site.

The positive and negative effects of ICT tools

ICT tools have become a wonderful part of everyday life. You can read the news with just a click of the mouse. You can upload and download videos and photos and view them whenever you want. You can communicate with friends and family anywhere in the world!

However, there are negative consequences of ICT tools. You may come across something online that upsets you. You can get eye strain or headaches from using your devices too long. Some people may rely on searching on Google™ to answer all their questions – even though it doesn't always give the right answer!

Remember to use ICT tools wisely and ethically. Know when to put your device down. Stay active and social – and be responsible.



Explore

What is an important message you would like to share online? Why do you feel it's important? Write a paragraph communicating your message. Then share it with the class.

Review

1. Explain how to use ICT tools ethically.
2. Discuss how ICT tools affect our everyday lives.

Self-assess

Go to the Objectives at the beginning of the lesson.
Check the correct I can . . . box.

Learn by doing

LESSON 3 Using ICT tools in a healthy and ethical way

Values

1 Think and answer

Read the situations. Answer the questions.

1. Nadia went to her friend's birthday party over the weekend. She took a lot of photos, including funny photos of her friends. Later that day, Nadia posted the photos on social media, and she tagged her friends. One of her friends was upset that she was tagged in a photo. What are some reasons Nadia's friend might be upset?

   ____

   ____

   What should Nadia do next?

   ____

   ____

2. Maged created a PowerPoint® presentation about air pollution in big cities. He worked quite hard, and did a lot of research. In his report, he included the following:
   - statistics about pollution in big cities ☐
   - his opinions about the effects of air pollution ☐
   - what he learned about the effects of air pollution ☐
   - an environmental scientist's views on how to reduce air pollution ☐
   - his experience visiting a local factory ☐

   Check the information above that needs to be credited. Then, write why the information needs to be credited.

   ____

   ____

   ____

   ____

   ____

   ____

   ____

   ____

Graphic organizer

2 Think and write

What are some of the pros and cons of ICT tools in everyday life? Consider:

- access to information
- health and exercise
- people of determination
- privacy

Pros of using ICT tools	Cons of using ICT tools
___	___
___	___
___	___
___	___
___	___

ICT and me

3 Write a summary

Make a promise to yourself to use ICT tools in a healthy and ethical way. Write 1-2 paragraphs to explain how you will fulfill this promise. Consider:

- posting online
- respecting the law
- health

___

___

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___

LESSON 4 How to search online

Objectives

By the end of the lesson, I will be able to:	After the lesson, check the correct box: **I can . . .**		
• Explain how to use browsers to search safely and correctly.	Very well	OK	Need more work
• Discuss the process of choosing which key words to use in an online search.	Very well	OK	Need more work

Engage

Can you always find the information you need when you search? What problems have you had when searching?

Learn

Searching safely

Be sure to take advantage of the safety features of browsers you choose to do searches on. Choose browsers that warn users when they're about to enter an unsafe site or download a harmful app. If you get a warning message, be sure to show your teacher or a family member. Do not proceed to the site or with the download.

Some popular browsers have search engines set up just for children, and they will only show results that are age-appropriate. Browsers like this may also include a parental control app and helpful safety tips for children.

It's fun to watch videos online. A particular website might not be dangerous, but it might contain material you shouldn't view. Choose child-friendly websites that include filters that help you avoid clicking on inappropriate videos.



Searching smartly

Type longer phrases, not just a couple of words. This will help you get better results. If your keywords are too general, you will get too many results. Many of the results will not be relevant to your search.

Example:

There is an animal called a jaguar. There is also a car brand called Jaguar. If you type in 'jaguar' you may get advertisements for a car! To avoid this, type 'jaguar animal'. If you were interested in where jaguars live you could type 'jaguar - animal - habitat'.

If you are searching for information on an image, use the image instead of words in your search. Use the camera button, and add your image. Your teacher can help you.



Many search engines ignore some words (like *the, and, how, where, or*). Sometimes, you need these words to be included in your search. To include them, add a + sign before the word.

Sometimes, you may want to ignore results with some keywords. This can help you avoid getting unwanted or unnecessary results. Just type a - before words you would like the search engine to avoid.

Finally, if you are searching for a particular phrase, put the phrase inside quotation marks. This will help narrow your search to the exact wording.

Explore

Think about what search words you will use, and what you expect to find. What will you do if you find confusing results? Who will you ask for help if you need it? Write a plan and share it with your classmates.

Review

1. Explain safety features that browsers you use should include.
2. Discuss effective ways to do a search online.

Self-assess

Go to the Objectives at the beginning of the lesson.
Check the correct I can . . . box.

LESSON 4 How to search online

Comprehension

1 Look and match

Match the words with their meanings.

1. browser 2. search engine 3. results

a. a software application that carries out web searches ☐

b. a software application that is used for accessing information on the internet ☐

c. a list that is compiled based on a search ☐

2 Look and write

When might you type the following characters when searching a topic online?

1. + sign: ____________________

2. - sign: ____________________

3. quotation marks: ____________________

Critical thinking

3 Think and write

Think about what you learned about searching smartly. Read each topic and decide what you would type to search for it. Remember, you can include special characters that can help to narrow your search.

Topic 1:

You are searching for information about football leagues in your area. Think about what you want to avoid in your search, and ways that it could be narrowed to focus specifically on what you need.



Topic 2:

You would like to do a search on different breeds of cats. You want to avoid getting the following results:

- the play or the film
- cat products for sale
- cat jokes



Topic 3:

You are researching different types of plants. You want to focus your search on plants that can survive with no direct sunlight.



ICT and me

4 Think and answer

1. What topics are you most interested in searching for online? Why?

____

____

____

____

____

2. When might you decide to search with a picture instead of typing text?

____

____

____

____

____

LESSON 5 How to check whether information online is true

Objectives

By the end of the lesson, I will be able to:	After the lesson, check the correct box: **I can . . .**		
• Identify the characteristics of a reliable online resource.	Very well	OK	Need more work
• Describe reliable and non-reliable sources of information online.	Very well	OK	Need more work
• Explain the purpose of the Egyptian Knowledge Bank.	Very well	OK	Need more work

Engage

How do you know whether information you find online is true?

Learn

There are countless online sources that provide valuable information. However, not all online sources are reliable.

Unreliable online sources

Social media apps and websites can connect you to information you may be looking for. For instance, you may find a group page that contains information on a subject you've been researching.

The information could include some credible information, but it could also include opinions, errors, or even lies. These types of sources are usually not reliable. Wiki sources and blogs are also not very reliable, for the same reasons.



Confirming reliable sources

When reviewing online sources, check to make sure the date of the publication is current. Check the authors - who are they? Are they experts in their field? Ask your teacher or a family member to help you check. A reliable source will be well-written, with almost no mistakes. The design of the page will look professional.

Websites with .com may be credible, but they are often run by businesses trying to sell you something. Websites with .gov, .org, and .edu can be particularly credible. They are run by government agencies, non-profit organizations, foundations, colleges, and universities.

The Egyptian Knowledge Bank



The Egyptian government is doing its best to protect its citizens from unreliable online sources. In January 2016, the Egyptian Knowledge Bank (EKB) offered free access to their library to Egyptian citizens. The library contains materials on various subjects. All information has been verified as accurate. You can feel confident that the information provided by the EKB is reliable.

Researching online can be a lot of fun, but it can also be challenging. Remember, knowledge is power. Use what you learned here to help you determine if an online source is credible.

Explore

Read the printouts that your teacher gives you. Work with a partner to decide which sources are reliable and which are not. Explain your reasoning.

Review

1. Discuss what makes a source reliable and what makes a source unreliable.
2. When will you use the Egyptian Knowledge Bank? Why?

Self-assess

Go to the Objectives at the beginning of the lesson.
Check the correct **I can . . .** box.

Learn by doing

LESSON 5 How to check whether information online is true

Comprehension

1 Read and answer the questions

1. Match the website domains to the types of groups that run them.

.gov.eg	☐	a. Egyptian organizations
.org.eg	☐	b. commercial sites
.edu.eg	☐	c. governmental sites
.com	☐	d. educational sites

2. What do each of the groups above use their website to do or to promote?
   a. Egyptian organizations ______________________________
   b. commercial sites ______________________________
   c. government sites ______________________________
   d. educational sites ______________________________

3. Why can the above website domains be reliable sources of information?

____

____

____

4. Why are blogs and social media sites usually not reliable sources of information?

____

____

____

Graphic organizer

2 Think and write

1. What websites have you visited or heard about? Write a list.

____

____

____

____

____

____

____

2. When researching information, it is important to understand which types of sources are reliable, and which are not. Look at your list of websites. In the chart below, write which ones are reliable sources of information, and which ones are not. Your teacher can help you.

Reliable sources	Unreliable sources

Critical thinking

3 Think and answer

Explain why the sources you listed in the chart above are reliable or unreliable.

Reliable:

Unreliable:

ICT and me

4 Write a summary

In Lesson 8, you will present research on a topic. How will you use what you learned in this lesson to prepare you to do research? How will you choose sources to use for your presentation? How will you determine which sources are reliable, and which ones are not?

LESSON 6 Who can help you with online problems?

Objectives

By the end of the lesson, I will be able to:	After the lesson, check the correct box: **I can . . .**		
• Explain common online problems.	Very well	OK	Need more work
• Identify who can help me with online problems.	Very well	OK	Need more work
• Describe the role of General Department for Combating Internet Crimes in Egypt.	Very well	OK	Need more work

Engage

If someone was unkind to you online, what would you do? Who would you tell?

Learn



Online bullying and how to avoid it

Bullying is repeated unkind behavior towards someone. Online bullying can include mean posts, messages, or texts. They may be shared with just you, or with others, too. Our devices are always with us, so it can be hard to escape this kind of bullying. This may make you feel trapped.

So, make sure not to contact anyone you don't know and to ask your teacher or a family member for help in any situation that may be dangerous to you.



Online identity theft

Your identity, or a family member's identity, may get stolen online. When this happens, someone uses your personal information. They may have access to your social media accounts. They could see your address, email, or phone number.

What can you do about online problems?

You don't have to solve online problems on your own. When you face them, be sure to talk to your teacher or a family member about it. Sometimes, your teacher or family member may feel that people in authority should get involved. This can include the police or **The General Department for Combating Internet Crimes in Egypt.**



Remember, online problems are common. They can be scary and make you feel helpless. However, you can always get help. No matter how embarrassed or scared you may feel, tell a person you trust. Trusted adults in your life want to help you. And your local police department and the Egyptian government are dedicated to protecting you, too!

Explore

Think about the different types of online problems you learned about in this lesson. Which ones do you think you might try to resolve on your own? Which ones would you ask your teacher or a family member to help you with? Make a list for each and explain why. Then compare lists with a partner.

Review

1. What are some common online problems? Who can help you solve them?
2. Discuss the role of The General Department for Combating Internet Crimes in Egypt.

Self-assess

Go to the Objectives at the beginning of the lesson.
Check the correct I can . . . box.

Learn by doing

LESSON 6 Who can help you with online problems?

Issues and challenges

1 Read and choose

Read the situations and check the best answer.

1. Your friend is getting bullied online. He/ She is upset. What do you say to your friend?

    a. "You're being a bit silly about this. Get over it!" ☐
    b. "Let's bully them back!" ☐
    c. "We should get their personal information and post it for everyone to see. Then they will stop." ☐
    d. "You need to tell your teacher or a family member, even if you don't want to" ☐

2. You accidentally end up on a website that includes bad language and scary images. What do you do?

    a. Forward it to a friend and ask if this is something you should show to your teacher or a family member. ☐
    b. Look for contact information on the site so you can send a complaint. ☐
    c. Leave the site immediately. Ask your teacher or a family member to help set parental controls on your device. ☐
    d. Leave the site immediately, and never go online again. ☐

Comprehension

2 Think and answer

Read and answer the questions.

1. What would you do if you were bullied on a social media platform?

    ____

    ____

2. When someone tries to commit online identity theft, what information might they look for?

    ____

    ____

3. Who should you turn to when you experience online problems? why?

    ____

    ____

ICT and me

3 Think and write

Imagine that The General Department for Combating Internet Crimes in Egypt is looking for junior volunteers to help them protect its citizens from cyberattacks. You have been chosen to lead the Junior Division!



1. Choose three friends, siblings, or classmates to be part of your cybersecurity group. Write their names and explain their roles.

Name	Role
______________________	______________________
______________________	______________________
______________________	______________________

2. You need to choose your teacher or a family member to oversee your group. Who would you choose, and why?

____

____

____

3. Give some examples of how your group would help protect others from online threats.

____

____

____

____

____

4. The General Department for Combating Internet Crimes in Egypt wants to give each member of your group a special badge for all your hard work. Draw a picture of what the badge might look like. Include images or words that relate to online security.

LESSON 7 My personal digital safety plan

Objectives

By the end of the lesson, I will be able to:	After the lesson, check the correct box: **I can . . .**		
• Describe the importance of creating strong passwords.	Very well	OK	Need more work
• Explain the importance of good anti-virus software.	Very well	OK	Need more work
• Explain ways to protect devices from possible online dangers.	Very well	OK	Need more work

Engage

Why is it important to have strong passwords?

What is anti-virus software? Do you have anti-virus software on your devices?

Learn

Creating strong passwords

It is important to have strong passwords. If your passwords are easy to guess, people can get into your computer or accounts. This is called hacking and the people who do it are called hackers.

Don't use the same password for all your accounts. If someone gets your password, they will be able to access your other accounts, too.

It is tough to remember a lot of passwords. Use a password manager or keep a list of your passwords in a safe place that only you and your teacher or a family member have access to.

Your password shouldn't include your name or other personal details. It should be at least eight characters long. A strong password will include letters, numbers, and special characters.



Choosing anti-virus software

A computer virus can cause big problems, such as sending an email to everyone on your computer or deleting your files. You should always protect your devices with anti-virus software. Choose software that protects your device and is easy to use.

A good anti-virus software catches viruses before they affect your device. It can also remove viruses that have already affected your device. It can fix damaged files.

Be careful while using the internet

You should be aware of the importance of staying safe while using the internet. You can be safer by using different passwords for your accounts on different websites including social media platforms like Facebook, and email sites. You also need different passwords for your digital devices (computer, laptop, tablet, mobile phone) and by installing anti-virus softwares on those devices.

There are websites that offer security services for your accounts. They do this by giving you instructions to follow for creating passwords for your personal accounts. Make sure you choose strong passwords which nobody can guess.

Explore

Ask how different people protect their devices. Use what you learned in Learn to create a personal online safety plan. Compare your plan with your classmates'. Update your plan if you find new, helpful information.

Review

1. Is it better to have one password or different passwords? Explain.
2. Discuss features that make good anti-virus software.

Self-assess

Go to the Objectives at the beginning of the lesson.
Check the correct I can . . . box.

Learn by doing

LESSON 7 My personal digital safety plan

Life skills

1 Look and answer

Are these passwords secure? Suggest ways they can be made more secure.

1. Abdelaziz456

2. dQvI!4@vtM

3. abcl23

4. Password*I

2 Think and answer

Create your own example of a weak password and a strong password. Explain why each is either weak or strong.

1.

2.

Critical thinking

3 Think and write

Anti-virus software keeps you safe while you are online.
How does good anti-virus software protect your computer?

4 Think and draw

1. Design a logo for anti-virus software.
   Draw the logo here.

2. Describe your anti-virus logo. Explain why people should choose this anti-virus software.

LESSON 8 Practicing what you learned

Objectives

By the end of the lesson, I will be able to:	After the lesson, check the correct box: **I can . . .**		
• Discuss topics that I would like to research with my classmates.	Very well	OK	Need more work
• Identify an important topic to raise awareness.	Very well	OK	Need more work
• Choose a suitable presentation tool.	Very well	OK	Need more work

Engage

What topic are you interested in researching? Why? What do you already know about that topic?

Learn

Researchers and scientists prepare digital reports about the subject of their studies using various programs like PowerPoint® or video. They sometimes make documentaries and post them on their personal blogs or publish them online in order to spread their findings and benefit people as best they can.

PowerPoint® is a Microsoft® program that creates a slideshow of the material you want to present.

At the end of this theme, you will be asked to prepare a digital report about one of the subjects of your studies. In order to make this digital report you need to do a lot of research first, so that you can present it in a way that suits you.

PowerPoint® presentations

PowerPoint® is a fun way to present your ideas to others. You can make text look interesting using WordArt®. You can also make your presentation appear like a book. In your book, you can include text and pictures about your topic. You can even include fun sound effects.



Videos



You can make your own video to present your research. You don't need film sets or expensive cameras to make a video. You can make one on a laptop, tablet, or cell phone. You can record yourself presenting your ideas. You can interview others, and include them in your video, too. You can also add more details and fun effects with different sounds and images. There is a special video software you can download to help you. Remember to check and make sure an application is safe before you download it.

Posters

If you don't have access to a device, you can still present your ideas effectively. One fun, effective way to present your research is by creating a poster. Choose fun colors when writing information. Include art, like drawings, or photos, or cutouts. Always make sure that the text is large enough for others to read from a distance.

Always present your ideas clearly. Also, always remember to credit your sources.

Explore

Choose a topic that you studied about this year (all subject areas) that you want to raise awareness about. Use the information you learned in Theme 2 to outline the steps you will take to research your topic safely and effectively. Explain problems that may come up during your research and how you can solve them. Then create a PowerPoint® presentation, video, or poster display to present your information to the class.

Review

1. Explain the different ways you can present your research to others.
2. Which software or tools do you need to present research in each way?

Self-assess

Go to the Objectives at the beginning of the lesson.
Check the correct **I can . . .** box.

Learn by doing

LESSON 8 Practicing what you learned

Life skills

1 Think and answer

It's time to do your own online research! First, let's plan.

1. What is the topic you will be researching? Choose one of the ideas below, or choose your own topic.
   - Water shortages in Egypt
   - Littering problems in Egypt
   - How the fast-food industry is affecting the health of Egyptians

   ____

2. Why did you choose this topic?

   ____

   ____

3. Who is your target audience?

   ____

4. Which browser(s) and search engine(s) do you plan on using? Remember, think about safety!

   ____

   ____

5. Choose a teacher or member of your family to help guide you in your search. Write your choice below and explain why you chose this person.

   ____

   ____

6. Which presentation method do you plan on using? Check. Be sure to consider your method when you are researching your topic.

PowerPoint® presentation	☐
poster	☐
video	☐

2 Take notes

As you research, write notes in your notebook. Be sure you include sources so you can credit them in your presentation.

3 Complete an outline

It's time to organize your notes. Complete the outline to reflect how you will present your information.

Introduction:	______________________
Important section 1:	______________________
Important section 2:	______________________
Important section 3:	______________________
Conclusion:	______________________

4 Create your presentation

Finally, it's time to create your presentation. Check that your information is accurate. Check that there are no spelling or grammar mistakes. Remember to credit your sources and make your presentation informative and interesting. Have fun creating it!

ICT and me

5 Think and answer

Congratulations on completing your research! Now share your thoughts on your experience.

1. What did you like most about researching your topic, and why?

____

____

____

2. What part of the researching process did you find the most difficult? Did you ask for help, and if so, who did you ask?

____

____

____

3. Explain your choice of presentation method. Why did you choose to present your topic using this method?

____

____

____

4. Is there anything about the research process that you might do differently next time? Explain why or why not.

____

____

____

REVIEW Theme 2

Vocabulary

1 Write and compare

Write a sentence for each set of words to explain the connection between them. Then compare your sentences with a partner.

1. block and bullying

2. credit and source of information

3. identity theft and spam

Review Questions

2 Read and answer

1. List three sources researchers can use to do research.
2. What do computer viruses do to a device and to the information on the device?
3. What should you do before tagging a friend in a photo or post?
4. Why is it helpful to put a phrase in quotes during an online search?
5. What is one reason a blog may not be a reliable source?
6. What is an example of online bullying?
7. What is hacking?
8. What is PowerPoint®?

Critical Thinking

3 Think and answer

1. Why is the Egyptian Knowledge Bank a reliable source of information?

   ____

   ____

2. Explain why crediting a source is an example of ethical behavior.

   ____

   ____

3. How has ICT positively affected your life?

   ____

   ____

Essential Question

4 Think and complete

Think about the information that you have learned in this theme. How does it help you to understand how to be safe and use reliable sources when online? Complete the sentence with your own ideas.

After studying this theme, I know that I can be safe and use reliable sources when online because ____

____

Activity

5 Research and create

Create an exhibition about a consumer product that uses ICT that you find interesting.

Find photographs or draw pictures of it. Then make labels and write captions for your photographs and illustrations. Include information about:

- what makes it so interesting
- how it works / how it helps users
- the pros and cons of using such a device on a regular basis
- where you can find / buy / see it

Invite your classmates to visit your exhibition.

PROJECT Term I

1 Read the title of the project carefully and think about what you need to find out.

Digital safety

Interview friends, neighbors, family to gather more information on how to safely surf the internet and what to do in case they encounter an unsafe website.

- How can we use the Internet safely?
- How do you use the Internet? How can you be safer online?
- How do your friends and family use the Internet? How can they be safer online?
- What should we do if we encounter an unsafe website?
- What other safety precautions can we take online?

2 Put your group together. Who are you working with?

- ______________________
- ______________________
- ______________________
- ______________________

3 Brainstorming ideas

What will you product be? What will it look like? What do you need to do?

____

____

____

____

4 Gather information

Where will you get your information from?

The school library ☐

The Egyptian Knowledge Bank (EKB) ☐

Interview with my family and classmates ☐

What information do you need to know?

____

____

____

____

____

5 Our plan

Write down your plan for doing the project. Plan the steps.

1

2

3

6 Our final product

7 Presenting our work to the class

How can we present the work? What will we say?

Notes

Notes

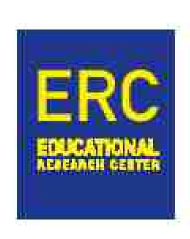
Notes

Notes

المواصفات الفنية:

مقاس الكتاب:	١٩ × ٢٧ سم
طبع المتن:	٤ ألوان
طبع الغلاف:	٤ ألوان
ورق المتن:	٧٠ جرام كوشيه
ورق الغلاف:	١٨٠ جرام كوشيه
عدد الصفحات بالغلاف:	٨٨ صفحة

















Information and Communication Technology

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